DOCUMENT RESUME

ED 045 807 VT 011 748

TITLE	Functions of Industry.
INSTITUTION	Georgia Southern Coll., Statesboro.
NOTE	212p.; Result of the EPDA Inst in Industrial and Career Development (Georgia Southern Coll., Statesboro)
EDRS PRICE	EDRS Price MF-$1.00 HC-$10.70
DESCRIPTORS	*Course Content, Course Objectives, *Films, Filmstrips, *Industrial Arts, *Industry, Instructional Aids, Secondary Grades, *Teaching Guides
IDENTIFIERS	*Education Professions Development Act, EPDA

ABSTRACT

Intended for teachers of industrial arts in teaching the functions of industry, this course of study was compiled as a result of the EPDA Institute in Industrial and Career Development at Georgia Southern College. Contents are: (1) Introduction, (2) Organization, (3) Research and Development, (4) Production, (5) Marketing, (6) Finance and Control, (7) Personnel Administration, (8) External Relations and (9) Secretarial and Legal. Each section contains suggested student activities, instructional aids, teacher notes, and counselor interaction in the program. Appended are various instructional aids that may be used including a listing of numerous films and filmstrips. (GB)

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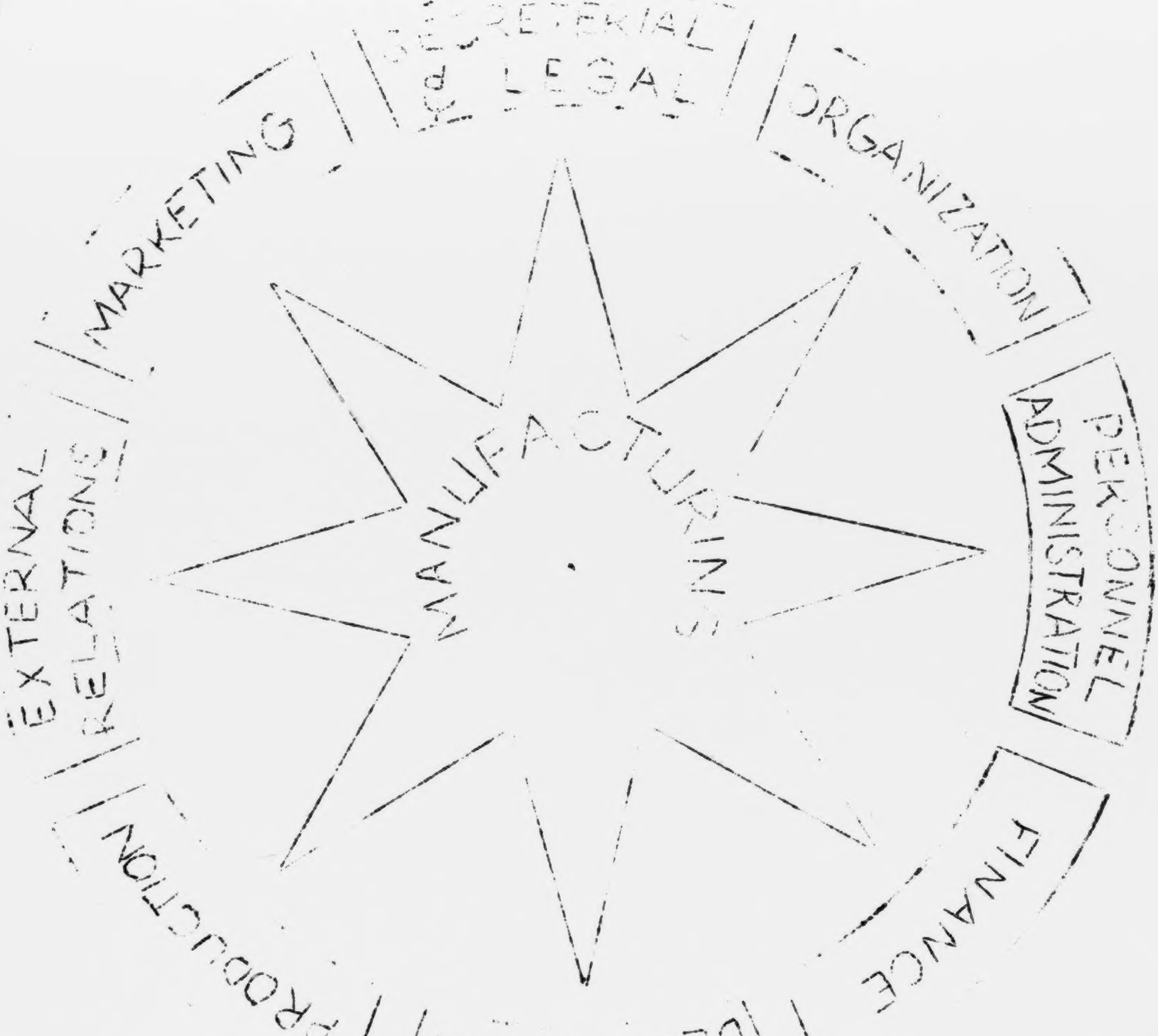
SECRETERIAL & LEGAL
ORGANIZATION
PERSONNEL ADMINISTRATION
FINANCE
RESEARCH & DEVELOPMENT
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INDUSTRY

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These materials are the result of an EPDA Institute in Industrial and Career Development held at Georgia Southern College in the Industrial Technology Division.

A COURSE IN INDUSTRIAL ARTS

INTRODUCTION TO INDUSTRIAL ARTS

Industry and its technology have had, and will continue to have, an overwhelming impact on society. Industrial ingenuity has brought change through new tools, materials, methods, and developments. Automatic production, scientific management, engineering research, and the changing occupational pattern with its requirements for continuous retraining are evidence of a new way of American life brought about by industry and its technology.

Industrial arts is the study of industry and its technology: their origins and development; their organizations, structure and interrelationship; their tools, materials, processes, products, and occupations involved in converting raw materials into useful products; their related social, economic, and cultural problems and benefits. It involves the student in creating, experimenting, inventing, designing, constructing, and operating with industrial materials, processes, and products.

Industrial arts is not vocational education nor is it manual training or manual arts. While tools and materials are prominent in industrial arts, the development of tool skills and the building of projects, are not the purpose of this program. Actually, industrial arts parallels industry in a process of evolution. Research in this subject area reveals a body of principles and knowledge that identifies it as a discipline.

Industrial arts is designed specifically to help prepare individuals to meet the requirements of our technological culture. As an integral part of the total program of education it provides unique opportunities for students to obtain representative industrial technological experiences. These experiences require the application of mathematics, science, language arts, and other school subjects. Industrial arts assists in the discovery and development of personal aptitudes, interests, creative technical abilities, self-reliance, sound judgement, and resourcefulness through problem solving and self expression in an environment related to industry. Problems involve the students in developing ideas from their inception, through the necessary research, planning, designing, modifying, evaluating, communicating, managing, layout, cutting, shaping, forming, assembling, finishing, testing, and evaluating phases. Through these experiences and through close working association with classmates and teachers, the objectives of the course are attained.

Industrial arts brings about changes in the learner that involve the man-made physical world. They are brought about through relevant activities which assist the learner in discovering and developing:

1. A knowledge of how man satisfies his material needs by changing raw material into useful products through an organized and systemized complex termed industry.

2. An insight and understanding of industry and its technology and the impact they have on the culture.
3. Interests and capabilities in careers related to the total complex of industry and its technology.
4. The ability to apply the concreteness of tools, materials, and processes to the solution of technical problems involving the application of science, mathematics, mechanics and inventiveness.

INTRODUCTION TO MANUFACTURING·

Manufacturing is a term often used in describing the activities by which man makes useful things from natural resources. Manufacturing takes an idea and raw material or a natural resource and makes something useful by subtracting, forming, adding, and finishing. Also utilized are labor, management, and capital for machines and buildings in the manufacturing industry.

This course in Manufacturing is organized for the purpose of providing boys and girls with an opportunity to acquire some basic understanding of· (1) industry, its organization, its tools, its materials, its processes, its occupations, its products, its problems, its benefits, and its technology; (2) themselves in the areas of ability, aptitude, interests and career maturity: (3) the relationship between knowledge gained about industry and the knowledge of themselves and; (4) the usefulness of their relationship to industry in making educational and career plans for the future.

It should be noted, at this point, that as the course is being taught, it will be necessary for the students to be given instructions as to the operation of machinery and manipulation of tools. The teacher should pull from the lesson plans those areas that will be of benefit for operating machine tools and other tools and hardware of industry.

The objectives of this course are to develop in the student:

1. Insight and understandings of the manufacturing industries and their technology in our culture.
2. Interests and capabilities in manufacturing with emphasis on men, materials, processes, and mechanisms.
3. Knowledge and understanding of the development of manufacturing technology as it is developed and applied in the United States.
4. Proper attitudes of good human relations through cooperative activities and the need for continual good relationships in all areas of life.

5. The ability to use tools, materials and processes to solve technical problems involving the application of science, mathematics and inventiveness.

6. Understanding of the opportunities and requirements in the manufacturing industries as they relate to career development.

7. Technical, recreational, cultural and occupational interests and attitudes.

8. The abilities to choose and use industrial products wisely.

9. A means of representative industrial experiences, through mass production activities, resulting in pupil growth and development which is both technical and social.

10. The ability to explore industry and the American industrial culture in terms of the organization, raw materials, processes and operations, products and occupations.

11. An understanding of education as a means of achieving both short and long range goals.

12. The ability to analyze the knowledge learned about industry and discover areas where more knowledge about self is needed to better prepare for the future.

MODEL ORIENTATION

Week	Instructional Topics	Instructional Aids	Student Activities
	I. Nature and purpose of the course		
	II. Pretests	COUNSELOR INTERACTION Administer data gathering devices	
	III. Classroom formalities		
	A. Textbooks		
	B. Data cards		Fill out data cards
	C. Student materials		
	D. Grading		Keep an up-to-date notebook
	IV. Safety Program	Film: "Working Safely In The Shop"	Make up safety slogans and posters
	V. Preview of Manufacturing		
	A. Organizing		
	B. Producing	Special tools, jigs, and fixtures Instruction sheets Material sheets Route sheets Drawing of the Product	Mass produce a product
	C. Evaluation	COUNSELOR INTERACTION Review for self understanding	

SUGGESTED LESSON PLAN . . . . .ORIENTATION

NOTE TO INSTRUCTOR:

Career Development is the one overall objective of this course and is a joint effort of Industrial Arts and Guidance. The Counselor and the Industrial Arts teacher should present a "united front" to student in explaining the long range aims. A good start at the beginning of the year is of prime importance in teaching industrial arts. As many lasting impressions are made at the first class meeting, try to insure the most favorable student impressions. On that day have your lab in perfect order, your instructional materials ready and your enthusiasm in high gear.

Students, at the beginning of a new experience, are usually more eager and excited about the things they are to learn. Getting each student involved in activity as soon as possible will help him see his personal value with the toal worth of the subject. For these reasons, mass production of a product is desirable during the first week students are in the class. The instructor should have all the necessary materials needed and all the machines that are to be used, checked thoroughly. Being well organized will play a great part with the smoothness of this first production.

COUNSELOR INTERACTION:

Administration of the interest survey and questinnaires is recommended before any intruction begins so the total affect of the course on the students' growth may be evaluated.

OBJECTIVES:

1. To orient the students to industrial arts, and the informality of industrial arts classes.

2. To interest the students by involving them in a meaningful experience of producing a useful product.

3. To develop safety consciousness within the students and help them realize the beneficial nature of this subject.

4. To teach students that through this course in Manufacturing, they may learn the importance of decision-making for self-attainment.

5. To help students become aware of the counseling services as an aid to decision-making, educational, and vocational planning.

TIME ANTICIPATED: 1 week

LESSON INTRODUCTION:

In order to manufacture a product, materials, manpower, and machines must be present. Natural resources cannot be increased and human energy is limited to a certain degree. Only the tools and machines can be changed. When using the tools and machines in the industrial arts laboratory to mass produce a product, it may be necessary to make devices called jigs and fixtures to help the machines perform better and more safely. The use of jigs and fixtures is one of the techniques used to produce parts that are the same size and shape. This concept of interchangeable parts aids in the assembling of the many items produced in industry.

Motivate the students. Point out to the students that in order to meet the needs and desires of society, industry must find ways to supply them. Bicycles, ball gloves, skates, fishing rods, and model cars are all products of industry.

SUBJECT MATTER OUTLINE:

I. Orientation

A. Nature and Purpose of the course

The study of Manufacturing gives boys and girls an opportunity to acquire some basic understandings of the tools, materials, processes, products, opportunities, and working conditions in the world of work.

COUNSELOR INTERACTION:

The activities and subject matter presented in the course can be used by the students as a basis for a comparison of his own interests, abilities, and knowledge with what will be required of him in the world of work. The knowledge the student acquires should be interpreted for himself in the light of how he sees himself in relation to this environment.

Pretests:

1. Explain the possible significance of this particular course for each individual in the areas of:

   a. Decision-making
   b. Career choice and maturity
   c. Educational plans

2. Explain and discuss the data gathering devices and how the results may be of use to the student in learning and understanding more about himself.

3. Administer the "Survey of Occupational Maturity", the "Personal Data Questionnaire", and the appropriate interest survey. One of the following interest surveys may be appropriate for the reading level of your students:
    - a. Kuder General Interest Survey, Form E
    - b. What I Like To Do -- A Survey Of Children's Interests
    - c. Ohio Vocational Interest Survey. (This survey must be scored by computer by the company.)

B. Classroom Formalities

1. Textbooks and references
2. Data card (Name, address, parent or guardian, occupation of parent or guardians, age, grade, hobbies, future career, work experiences.)
3. Student materials and obligations
    - a. Notebook
    - b. Pencils
    - c. Ruler
    - d. Supply fee
    - e. etc.
4. Grading
    - a. Objective tests
    - b. Special problems
    - c. Observation

C. Safety Program

1. Home
2. School
3. Industry
4. Around tools and machines
    - a. Color codes
    - b. Safety zones
    - c. Safety rules and habits

COUNSELOR INTERACTION:

Work with the Industrial Arts teacher to reinforce the importance of safety and safety consciousness in all areas of life.

INSTRUCTIONAL AIDS:

1. Film #1483 "Working Safely In The Shop"
2. Safety posters

STUDENT ACTIVITIES:

1. Make up safety slogans
2. Make and display safety posters

II. Preview of Manufacturing

- A. Organizing for production
- B. Producing a product
    - 1. Tool up machines
    - 2. Trial run of production
    - 3. Production (There should be at least one for each member of the class.)
- C. Evaluation
    - 1. Usefulness
    - 2. Construction
    - 3. Economy
    - 4. Demand
    - 5. Improvement

COUNSELOR INTERACTION:

The following questions may be discussed with the class after their first mass production experience:

a. What did this experience teach you about yourself?

b. What specific job or task that you performed did you feel was most meaningful to you?

c. What, if any, particular activity allowed you to do something you found you really liked to do, and what did you find you didn't like to do?

INSTRUCTIONAL AIDS:

1. Prototype of product
2. Prepared jigs and fixtures
3. Instruction sheets
4. Materials sheets
5. Route sheets
6. Drawing of product

STUDENT ACTIVITIES:

1. Mass produce a product (REMEMBER the purpose of this activity is limited to an attempt to captivate the interest and create the curiosity of the student. This activity is completely instructor planned and directed. The instructor prepares and sets up the necessary tools, jigs and fixtures to mass produce a simple, yet useful, article. The operations must be such that tools and machines may be used and used with complete safety. Only limited skills should be involved and only necessary instructions should be given.)

TEACHER NOTES:

After being involved in the actual production of a simple product, students should be stimulated to ask questions that will lead to a more thorough study of other aspects of manufacturing.

EVALUATION:

1. How does industry meet the demands of society?
2. How important is safety at home, school and in industry?
3. How important is it for a company to be well organized?

ORGANIZATION OF INDUSTRY

INTRODUCTION

All the activities in an enterprise of more than elemental size require organization. Organization is a problem of management that is exceedingly vital and often complex in substantial industrial operations. Individuals and groups are members of a team, that, to be effective, requires coordinated planning, assignment of responsibilities, direction, and control. An understanding of these principles that apply to organization in general and to the interrelationship designed to coordinate and control the various activities is the purpose of this lesson.

An organization is a systematically grouped body of individuals assembled for the accomplishment of some objective. In industry this entails the appropriate grouping of individuals into operating units. The assignment of authority and responsibility to each, and the defining of relationships between these units, to obtain coordination and control of action-steps known as "the process of organization." An efficient organization performs as a coordinated whole and moves toward the objectives for which it was designed.

Organizations of some sort have always existed among groups of people engaged in a common objective. In the simplest form, there is no more "structure" than that of boss or leader with one level of subordinates. As needs arise, the boss assigns tasks to subordinates and directs their efforts. Stable divisions of responsibility or systemized grouping of individuals may hardly exist. It is when demand for stability and specialization develops and when personnel relationships become more complex that systematized organization structure necessarily follows.

Line organization constitutes the structure of the simplest industrial enterprise. It is the backbone of larger organizations at any stage of development. The line comprises those individuals, groups, and supervising executives concerned with the primary objectives of the enterprise. A staff unit of an organization is one established to assist the line or any other part of the organization by performing advisory, service, coordination, or control functions which are necessary to the primary responsibility of the assisted unit. An organization chart is used to show these structural functions of an organization.

A study of career information will define the descriptions and qualifications of many of the jobs that are included in the organizational structure of an enterprise. Students are given the opportunity to project themselves into the world of work; thus enabling them to perform an analysis of the self in respect to their own interests and abilities.

ELEMENTS of (Industrial Decision Making)

The actual process of managing may be described as a simple three step procedure--establish objectives, direct the attainment of objectives, and measure the results. These three steps must be followed to perform any task, whether it be the building of a spacecraft or asking a girl for a date.

Establishing objectives could be divided into four elements---gather information, synthesize information, plan, and decide. The first element, gather information, goes on more or less informally all the time as we talk to people, read reports, mail, newspapers, and magazines. It occurs more formally when a person seeks to collect all available information on a given problem with which he is concerned. This step is essential before any intelligent action can take place.

The second element is to synthesize information which means to combine or put together the pieces of information. The information available on any given situation is seldom complete. A person must take the bits and pieces he has and form them into as complete a picture as possible. This picture can then be used as the basis for taking action.

Element three consists of planning. After the information has been gathered and synthesized, the various possible courses of action by which the goals may be reached are determined.

Deciding is the element which results in the selection of the course of action which seems to offer the best chance for meeting the objective. If the first three elements have been thorough, the decision may be easily reached.

These four elements are used to establish the objective. They accomplish the first step of the managing process and are used to determine what to do and when to do it.

The second step, direct the attainment of objectives, has four elements that must be performed to accomplish the objective. The first element is to organize. This consists of determining the methods of assigning facilities and people to accomplish the established objective. The person may seek help with this element from his associates or an outside consultant, but is basically responsible to organize the activity or project so that the objectives which he has established are accomplished through the efforts of the people he directs. At this point, he decides who is to do each phase of the necessary work.

The next element is to communicate. The person tells other individuals or groups what they are to do. He explains the objectives and describes the organization for their accomplishment. He makes sure that everyone understands the duties and responsibilities he has been assigned.

The third element is this step called motivate, which means to stimulate an interest. This is the point where the why of what is to be done is explained. A considerable understanding of people is needed to perform this element skillfully. If the reasons are presented in terms which will identify the success of the project usually results.

The next element is to direct, guide, or counsel. This is the how of doing the work. It consists of aiding progress through giving suggestions, orders, or additional data, or by teaching how the objectives can be accomplished.

These four elements are concerned with getting the work done. They are the second step of the three-step decision-making process and comprise the active part of decision making. They result in carrying out the objectives established during step one. Their effectiveness is greatly dependent upon the skill with which the elements in step one were handled.

The third step is measure, evaluate, and control. It is necessary for a person to be able to determine the effectiveness with which his plans are being carried out. Evaluation takes place throughout the active phase of decision-making as well as when the project has been completed. The person finds out, for example, what hindrance to progress are developing by information communicated to him by his group. This information, acting on a sort of feed-back principle, shown where alternations to plans may be necessary. At the end of the project, the final results obtained are compared with those anticipated. This often provides new information and the starting point for another decision-making cycle.

The element of developing people is one of the important obligation of decision making which can be best described by the use of industrial examples. The manager must get his results through others. It follows that if these others are adequately qualified through proper development, the results he will obtain will be better than would otherwise be the case. But in addition to this short-range goal, the manager has responsibility for the continued functioning of the work which he directs, whether he is on hand to manage it or not. The lives of many people--employees, customers, and in many cases, the public at large--are vitally affected by the continued successful functioning of each component of the business.

The manager has an obligation implied by his very position to do what he can to insure continuity of operation. This means that he must encourage the development of those who will in due time succeed him. This should be a continuing process, something that he does at all times as he contacts his people. This element exerts its influence on the total decision making cycle.

The final element is promote innovation. This in some ways is the most important of all. The manager must be the steady force behind innovation. If he wants the company to progress, he must never permit himself or his people to become satisfied with things as they are, Whether it be products, methods and processes markets, or the use of the company's capital. He must always strive to stimulate his people to seek better ways of doing their assigned tasks. The constant search for innovation should influence every phase of the decision-making cycle.

The eleven elements of decision-making or managing have been recognized and listed. The first nine are used, usually, in the order in which they are listed to carry out the three-step decision-making process. The other two affect the quality and continuity of the managing work done within the area of the manager. The eleven elements of managing may be listed as follows:

Established Objectives:

1. Gather information
2. Synthesize information
3. Plan
4. Decide

Direct Attainment of Objectives:

5. Organize
6. Communicate
7. Motivate
8. Direct, Guide, or Counsel

Measure Results:

9. Measure, evaluate, and control
10. Develop people
11. Promote innovation

STUDENT ACTIVITY:

1. Using the eleven elements of decision making, explain how decisions were reached in the project that was completed the first week of school.

2. Explain how a company would reach a decision concerning a product.

3. Explain how the eleven elements could be used for getting a date with a girl.

MODEL MANUFACTURING ORGANIZATION

Week	Instructional Topics	Instructional Aids	Student Activities
	I. Manufacturing Organization A. Organizing for Production	Film: Productivity Key to America's Economic Growth	Discuss and evaluate operations involved in introductory mass-produced product
	B. Principles of Industrial Organization	Field Trip: Manufacturing Industry (optional)	Visit an industry employing mass-production techniques.
	II. Starting an Enterprise	Text: Manufacturing Organization and Management. by Amrine	
	A. Basic Considerations 1. Need (public) 2. Profit 3. Personal Needs		Decide how class company will be formed by investigating the three major forms of company ownership.
	B. Methods of Financing 1. Stocks 2. Personal monies 3. Borrowing 4. Others	Refer to Unit on Finance	Finance Unit
	III. Types of Enterprises		
	A. Sole Proprietorship B. General Partnership	Resource personnel: Counselor, Business Educ. teacher, person(s) from industry, etc.	Discuss and decide upon the method that will be used in organizing the enterprise.
	C. Corporation	Film: Modern Corporation	

MODEL MANUFACTURING ORGANIZATION

Week	Instructional Topics	Instructional Aids	Student Activities
	IV. Organizational Structure of the Enterprise	Film: Competition and Big Business #4861	Prepare an organizational chart for the company.
	A. Mangerial	Models of company Structures:	
	1. Stockholders	1. Transparencies	
	2. Board of Directors	2. Charts	
	3. President	3. Slides	
	B. Line Organization		
	C. Staff Organization		
	D. Line and Staff Organization		
	V. Occupational Information	Counselor's Interactions	
	A. Job Descriptions	Aids:	Look up job descriptions in Occupational Handbook and D. O. T.
	1. Occupational Outlook Handbook	1. Occupational Outlook Handbook	
	2. D.O.T.	2. D. O. T.	
	B. Classified Sections of Newspapers	3. LIFE-CAREER GAME	
	1. Categories of jobs		
	2. Descriptive Information		
	C. Employment Offices		
	1. Federal 2. State 3. Local 4. Private		

SUGGESTED LESSON PLAN.....MANUFACTURING ORGANIZATION

NOTE TO INSTRUCTOR:

The purpose of this unit is to assist the students in developing a better understanding of the principles of organization used in our "Free Enterprise System." The importance of organization in industry can be better illustrated by having the students form their own company within the industrial arts class. Information on starting an enterprise, company structure, types of enterprises and occupations within any particular enterprise will be included in this unit lesson plan.

OBJECTIVES:

At the end of this unit the students will:

1. Understand the importance of organization to the industrial world.
2. Discuss the process involved in mass-production.
3. Prepare a historical review of the need for mass-production in our society.
4. Evaluate the three most popular forms of organization.
5. Determine the form of organization that will be used in formation of their enterprise.
6. Construct an organization chart to be used in their company.
7. Describe the duties and functions of the positions on their organization chart.
8. Investigate the reasons underlying the establishment of companies.
9. Visit industry to learn more about industrial methods, techniques and products of production.
10. Develop an attitude that will allow them to discuss industrial organization and management from a more logical approach.
11. Discuss career information with their parents, teachers, and friends.
12. Research a career and give the job description and qualifications for that career.

13. Evaluate job requirements in the light of their own interests and abilities.

14. Make better career choices in relation to their own self-appraisal.

TIME ANTICIPATED:

One to two weeks.

SUBJECT MATTER OUTLINE:

I. Manufacturing Organization
   A. Organizing for Production
   B. Industrial Organization

INSTRUCTIONAL AIDS:

Film #1. PRODUCTIVITY - Key to America's Economic Growth

Film #2. To Reach The Dawn

Film #3. World of Henry Ford, The

Field trip: Manufacturing Industry (optional)

Text:

a. Manufacturing Organization and Management, by Amrine

b. Manufacturing Management, by Irvin

c. General Industry

STUDENT ACTIVITIES:

1. Discuss and evaluate operations involved in introductory mass-produced product.

2. Compare the mass-production method to the individual method of producing a product.

3. Identify some of the advantages and disadvantages of the mass-production technique of manufacturing a product.

4. Use the comparison of the advantages and disadvantages of the mass-production method as a basis for deciding the type of company to form in the industrial arts class.

5. Visit an industry employing mass-production techniques.

TEACHER NOTES:

Show film #1 after students have finished mass-producing the first product.

Discussion should be led in the direction of having students decide to form an enterprise.

II. Starting an Enterprise

- A. Basic considerations
  1. Need (public)
  2. Profit
  3. Personal needs
- B. Methods of Financing
  1. Stocks
  2. Personal monies
  3. Borrowing
  4. Others

INSTRUCTIONAL AIDS:

Text:

1. Manufacturing Organization and Management by Amrine
2. Manufacturing Management by Irvin
3. Small Business Management by H.N. Broom

Refer to unit on financing for additional aids.

STUDENT ACTIVITIES:

1. Compile a list of consumer needs that will influence the formation of a company to supply those needs.
2. A discussion centered around new products that will be needed in the future.
3. Decide which method of production will be used in the industrial arts class.
4. The students will decide how their enterprise will be formed.
5. Research methods of forming an enterprise.

6. Consider the need and profit concepts when making the decision to form a company.

TEACHER NOTES:

1. Explain how big industries utilize the concepts of need and profit.
2. Re-enforce the idea of forming a company to facilitate manufacturing a product.

III. Types of Enterprises

   A. Sole Proprietorship

   B. General Partnership

   C. Corporation

INSTRUCTIONAL AIDS:

Film #5 Modern Corporation

Film #4 Going Places

Film #6 Eddie Incorporated

Film #7 Help Yourself to Ownership

Film #8 Small Business, U.S.A.

Text:

   a. Manufacturing Organization and Management, by Amrine

   b. General Industry

   c. Manufacturing Management, by Irvin

STUDENT ACTIVITIES:

1. Make an evaluation of the advantages of the Corporate form of organizing over the proprietorship or partnership in relationship to the intended use in the classroom.
2. Investigate the requirements for incorporating.
3. Decide on a name for the company.
4. Analyze the needs of the company and decide on how to finance the company. Refer to unit on finance.

TEACHER NOTES:

1. Have materials prepared that will assist the students in deciding upon a type of company structure.

2. Some students might be interested in studying company organization forms in more detail. Allow for individual differences.

IV. Organizational Structure of the Enterprise

   A. Mangerial

      1. Stockholders

      2. Board of Directors

      3. President

   B. Line Organization

   C. Line and Staff Organization

INSTRUCTIONAL AIDS:

Film: Competition and Big Business #4861

Models of company structures: Transparencies, Charts, and slides.

Text:

   a. Manufacturing Organization and Management by Amrine

   b. Manufacturing Management by Irvin

STUDENT ACTIVITIES:

1. Decide whether company officers will be elected by the class or appointed by the instructor.

2. Write up requirements for the various positions to be included in the organizational structure of the company.

3. Use the democratic process in deciding who will hold office in the company.

4. Prepare an organization chart for the company.

5. Include all the line jobs that will be necessary in the company on the organization chart.

6. Decide on the staff positions that will be necessary to assist the line in accomplishing its objectives.

7. Select several industrial company structures to use as models for setting up the company in the industrial arts class.

TEACHER NOTES:

1. Illustrate line organization and line and staff organization.

2. Use several companies to show the similarities and differences of company structures.

V. Occupational Information

   A. Job Descriptions

      1. Occupational Outlook Handbook

      2. D. O. T.

   B. Classified Sections of Newspapers

      1. Categories of Jobs

      2. Descriptive Information

   C. Employment Offices

      1. Federal

      2. State

      3. Local

      4. Private

COUNSELOR INTERACTION:

1. Plan group guidance sessions with students in the experimental group and introduce them to the Junior Guidance Booklet.

2. Assist students in the proper use of the Occupational Outlook Handbook and the D. O. T.

3. Introduce students to the LIFE-CAREER GAME.

4. Develop career activities centered around The Occupational Roles Kit (WORK)

5. Prepare occupational profile folders on each student in the experimental group.

INSTRUCTIONAL AIDS:

Film: How To Investigate Vocations #1-00576

Film: How To Keep A Job #1-00578

Filmstrip: Preparing for the jobs of the 70's #D-213

Filmstrip: Preparing for the World of Work #D-188

Occupational Outlook Handbook

D. O. T.

LIFE-CAREER GAME

Widening Occupational Roles Kit, Grades 6-9 #5-220

STUDENT ACTIVITIES:

1. Interview students for jobs in their company. (See personnel administration section)
2. Write up a job description for positions in their company.
3. Use the classified sections of local newspapers to get ideas about how to write job descriptions.
4. Determine what descriptive information is included in the classified sections of the newspapers.
5. Identify coding systems used by newspapers in classifying jobs.

TEACHER NOTES:

The counselor will normally assist more in this area than in any other section in this unit. Most activities will be centered around occupational information and the techniques used in presenting this type of information will be left up to the counselor.

SUMMARY:

This unit prepares students to understand the principles of manufacturing that exists in the United States today, and many of the changes that have occurred since its conception. The comparison of the processes in mass-production and those used in the individual method of production should be of great assistance to the class in deciding to form an enterprise to fully investigate and implement the principles of industrial organization and the mass-production techniques used in industry.

The study of organizational structure of companies should bring about a clearer understanding of the many problems businesses face today in their never ending fight for existence, and the development of more efficient methods of producing the goods and services demanded by our present society. Understandings of the careers that are associated with the various companies should aid the students in forming and staffing their industrial arts enterprise for production.

SUMMARY QUESTIONS:

1. Name some advantages of mass-production.
2. How has mass-production helped industry to better meet the needs of our society?
3. What are the three major types of company organizations?
4. Which of the three types of organization is governed by law?
5. What is the basic unit of any industrial enterprise in relation to its objectives?
6. What are some of the advantages of the line and staff organizational structure?
7. Why is it important to study the requirements for entering various occupations?
8. Should students discuss occupational information with their parents?
9. Would the study of occupations help you in making a vocational decision?
10. Could you successfully pass an interview for a job in industry after having studied this section on occupational information?

RESEARCH AND DEVELOPMENT

INTRODUCTION

Research and Development has as its objective the creation and refinement of new ideas in products and, in some cases, production methods. Research and development are not product design, and should not be put together. Product design follows research and development in the sequence of the manufacturing process. The people in research and development work directly toward long range product improvement through creative effort.

Although constantly engaged in research, personnel do not work just within themselves. They are always in contact with personnel from related departments. For example, sales people supply such information as: Customer preferences and needs; Suggested innovations in the product; and Stability of new or improved products suggested by Research and Development.

Before the ideas of research and development can be put into effect, they must be approved by top line executives of the company.

The ultimate objectives of research and development are to:

(1) Improve existing products;

(2) Develop new products, processes and uses; and

(3) Perform fundamental research for the advancement of industry.

The objectives of research and development do not extend to the manufacture of the product itself. Once the design has been created and approved, the product becomes the responsibility of production management.

Research, in past years, has been reserved exclusively for the work of certain universities and certain foundations and institutions. Today, a lot of the research has moved to the industrial concern. Companies are spending millions of dollars to get ideas and saleable products in advance of their competitors. In essence, research is the critical investigation into physical and natural sciences directed to the discovery of new knowledge. Usually, research is classified as (1) Basic or pure, and (2) applied or practical.

The goal of fundamental research is to add knowledge in a given field with no immediate concern for its application to a practical situation.

Applied research is concerned with the discovery of new facts and relationships in a field with a definite practical use in mind.

Development typically occurs chronologically after fundamental and applied research are complete. When an idea has been discovered and refined, then development carries it through to the point of actual design engineering, where the final blueprints and specifications are made, or directed to production itself. It is interesting to note that development is the most expensive phase of research and development, and is not entered into until the company is sure the idea is sound and has approved its production. Development work includes the preparation of models, the establishment of pilot plant operations, and the try-outs of the product with selected consumer groups. The cost lines of development come from the use of expensive equipment, and the setting-up of pilot plants.

MODEL RESEARCH AND DEVELOPMENT

Week	Instructional Topics	Instructional Aids	Student Activities
	I. PURPOSE AND FUNCTIONS OF RESEARCH AND DEVELOPMENT	Films:	
	A. Definiation of terms	1. Industrial Research, Key to Progress #1	Have a student write a short paragraph showing how industry uses Research and Development
	B. Functions	2. Men and Machines of #2	
	C. Methods		
	II. TYPES OF RESEARCH	3. Wonderful World of Quality Paints #6	
	A. Basic or pure (Fundamental)	Dictionary	Have students make an investigation of a product in the school home or community showing systematic and unbiased research
			Have students write a short paper showing why industries conduct research
	B. Applied or Practical Research	COUNSELOR INTERACTION Films:	
		1. Market Research #7	Organize students into a research team for the purpose of designing or redesigning a product
		2. Scientific Method #3	
		3. Research & Development #8	Carry out above investigation under direction of teacher to
		4. Scientific Method in Action #4	

MODEL RESEARCH AND DEVELOPMENT

Week	Instructional Topics	Instructional Aids	Student Activities
			interpret and evaluate results.
	III. DEVELOPMENT	Film:	
	A. New Product Development and Product Improvement	American Look-Introductory and Development Areas #7 Seeing Is Believing #13	Have student write up principles or system to be used in practical applications while developing the product.
	B. Advanced Development	COUNSELOR INTERACTION: Film: Scientific Method In Action #4 Filmstrip: a. Why Research b. There is a lot of Reason to Research.	
	C. Product Redevelopment For Cost Reduction	Film Wonderful World of Quality Paint #8	Organize into research team and under the direction of a science teacher, carry out an experience to solve a research problem.
		Sample of various type of insulation	Have students evaluate product in terms of purpose, appearance and consumer cost.

Week	Instructional Topics	Instructional Aids	Student Activities
	IV. PRODUCT ENGINEERING:		
	A. Product Design	Film: Change For The Better #13	Have students evaluate, interpret, and communicate results of product designed or redesigned
		Filmstrip: "Work" #14	Have students set up experimental process to see how it runs.
	B. Engineering Test	Pamphlet: Engineering #11	Have students revise new models to show new ideas that may be used.
		Sample of some product of industry	
	C. Factory Follow-ups	COUNSELOR INTERACTION: Brochure: The Technicians and Tomorrow #21	Utilize the service of a customer service director or commercial education teacher to give customer's appraisal of product developed.
		Filmstrip: Industrial Engineering, SVE A636-2 Production Engineering, SVE A636-3	
	D. Sale Assistance	Films: Aluminum Is Not Only Aluminum #13 Cross Section of America #11	Have students evaluate their product that they have designed and produced to see if they have produced a quality product.

MODEL RESEARCH AND DEVELOPMENT

Week	Instructional Topics	Instructional Aids	Student Activities
	V. DEVELOPMENT PHASES		Have students study and compare the quality of two identical products manufactured by different corporations.
	A new product, or redesign or a going product; passes through five phases before it reaches the ultimate customer	Pamphlet: The Story of The American Patent System Chart: Patents Issued Since 1790	Have student construct and fill out New Product Audit Sheet for the purpose of patent procedure.
	VI. PATENT FOR NEW PRODUCT		
	A. Product Audit Sheet and Product Audit conference	Copies of: New Product Audit Sheet New Product Data Sheet	
	B. Facts about the New Product		
	C. Patent Survey		
	VII. OCCUPATIONAL INFORMATION	Films: Choosing Your Occupation Careers in Technical Occupation	Reading of job description from DOT and Junior Occupational Briefs including several ones and his preferred occupational choice.

SUGGESTED LESSON PLAN (1) ....PURPOSE AND FUNCTION OF RESEARCH AND DEVELOPMENT

NOTE TO INSTRUCTOR:

This lesson is provided as an introduction to the areas, functions, and concepts of Research and Development as they apply to the manufacturing enterprise. The lesson will also classify the categories of research and how they are related to benefit industry in developing a product.

OBJECTIVES:

1. The student will be able to define research and development as it is used in industry.
2. The student will be able to state some of the principles used in research to investigate and experiment with a new product or to improve upon a product.
3. The student will be able to differentiate between product and market research.

COUNSELORS INTERACTION:

1. The student will engage in experiences both individual and group wherein he will be able to assess personal development, i.e., experimentation, evaluation, communication, and decision-making.
2. The student will be able to appraise his interests, aptitudes, and abilities as a result of using the methods of research as they relate to his preferred occupational choices.
3. The student will be able to apply the methods of research or problem-solving techniques in the solution of his everyday problems.
4. By providing experiences relating to research and development, the student should be able to discover and exhibit some aspects of creativity. This creative ability will be shown by developing an idea and producing a product.
5. The student should develop some scientific inquiry by investigating and exploring various scientific accomplishments and scientific occupations.

INTRODUCTION:

Research involves the preliminary investigation which leads to the conception of the product or to the solution of the more difficult problems in a product's development. Research obtains the facts and develops the principles on which subsequent decisions are based. It may be either basic or applied.

The process of converting an invention or product conception into final form is usually known as development. Developmental research involves the creation of methods and tools to produce a product.

Research and development, a relatively new corporate function, is the pacemaker of industries today; R & D probes every conceivable field and method, critically examining the old and new techniques in processes and in the designs and functional structure of products, and always reaching into new areas of space and science.

SUBJECT MATTER OUTLINE:

I. Purposes and Functions of Research and Development

  A. Definition of terms

    1. Research
    2. Development
    3. Systematic
    4. Unbiased

  B. Functions

    1. Investigate
    2. Discover or develop new or improve products and processes.
    3. Provide specialized technical support for products in the current line and for existing processes.
    4. Furnish information on technological changes affecting sale of current product or influencing introduction of new products.
    5. Establish quality test methods and procedures.

  C. Methods

    1. Product research

      a. The preliminary investigation which leads to the conception of the product
      b. The solution of the more difficult problems in a product's development.
      c. The obtaining of facts and development of principles on which the subsequent decisions are based.

2. Market Research
    - a. Studies market conditions
    - b. Studies customer's demands
    - c. Reacts to selling practices
    - d. Studies competitor's activities
    - e. Employs scientific methods of sampling opinion and analyzes results.

COUNSELOR INTERACTION:

Films:

Research and Development, No. 8
Scientific Method, No. 3

Short paper or booklet:

U.S. Atomic Energy Commission: What It Is, What It Does, No. 15

Prepare questions to ask a research person from industry science teacher on how pure and applied research are used in industry.

INSTRUCTIONAL AIDS:

1. Dictionary

2. General Industry Transparencies:
    - a. Management comes up with an idea
    - b. R & D take the problem and analyzes the possible product.
    - c. Market research studies the demands for the product and its stability.

3. Films:
    - a. Industrial Research - Key to Progress, No. 1.
    - b. Photography at Work, No. 2

4. Slides:
    - a. Why Research?
    - b. There is a lot of reason to research

5. Bulletin board with displays of stories, pictures, and news reflecting research and its importance in industry.

6. Text: Research and Development Function - American Management Association.

STUDENT ACTIVITIES:

1. Have student to write a short paper showing why industries conduct research.

2. Let students make an investigation of products in the school, home, or community showing systematic and unbiased research.

3. Have students write ways which industries use product ways which industries use product research and market research and give advantages of each.

TEACHER NOTE:

A. Research is scientific investigation including:

    1. Preliminary investigation leading to concept of a product.

    2. Obtaining the facts and developing the principles.

    3. May be pure or applied.

    4. Exploring nature scientifically for the purpose of increasing knowledge of the universe.

B. Development:

    1. Converts an invention or product conception into final form.

    2. Involves the creation of methods and tools to produce a product.

    3. Develops a prototype, not ready for actual production processes.

    4. Recreates and refines the prototype and build production systems so that it can be manufactured in an efficient, economical, and in a rapid manner.

C. Functions:

    1. Involves the formation of conclusion of the use of facts.

    2. Searches for better ways of doing things and for new knowledge.

    3. Examines many facts in order to cast new light on a complicated phenomenon.

D. Market Research:

1. Forecasting of market conditions.

2. Investigating customer demands: relates:

   a. To acceptance of existing lines of products.
   b. Interest in changes.
   c. Demands for new or additional production.

EVALUATION:

1. Cite three roles of research which contribute to company growth:

   a. Search for new knowledge
   b. Search for knowledge relating to a specific problem.
   c. Application of knowledge to the design of new product and processes.

2. Basic research aims:

   a. at some product, process, or practical problem.
   b. to discover new facts and principles in some field.
   c. at market analysis.
   d. at comprehensive investigation of competition.

3. What is research?

   Research is carefully oriented and organized investigation which seeks to extend current knowledge through the analytical and experimental discovery and use of new facts.

4. Research involves the preliminary investigation which leads to the solution of the more difficult problems in a product's development.

[✓ T] F 5. Research obtains the facts and develops the principles on which subsequent decisions are based.

LESSON PLAN (2)..............TYPES OF RESEARCH

NOTE TO INSTRUCTOR:

Research is carefully oriented and organized investigation seeks to extend current knowledge through the analytical and experimental discovery and use of new facts.

Basic or Fundamental Research is the studious inquiry conducted to understand the basic phenomena of nature. One of its primary aims is to broaden our knowledge based with little or no concern for the use which will be made of the new knowledge. The fact that one concept, generated from basic research effort, can give rise to a large number of products through the evolutionary process of applied and developmental research makes it the hub of manufacture.

The endeavor to extend the understanding of basic phenomenon, determine its practical significance and develop useful applications is called applied research. In applied research, which precedes product development, one of the common principal goals is the generation of a prototype product. The principal effort of applied research is directed toward understanding the basic phenomenon being investigated in order to obtain sufficient engineering information for use in the design of a prototype.

Applied research is intermediate between the discovery of the basic phenomenon and the generation of a final product. In many cases the applied research effort is done by organizations which do not discover the idea or ideas on which their applied research is based. Therefore, these groups are able to produce saleable products and results with a much high probability of financial reward.

OBJECTIVES:

1. Students will be able to discuss how industry uses research in making a decision for product development.

2. Students will be able to distinguish basic or fundamental research from applied research.

3. At the conclusion of this lesson the student should be able to answer the following questions as they apply to research and development.

    a. What is the basis of decisions in R & D?
    b. Is a decision based on accurate market surveys?
    c. How much money can safety be invested in research and development without danger to the support organization?

INTRODUCTION:

Research may be either basic or applied - two types are distinguished by their objectives. Research that is basic (Pure or Fundamental) aims to discover new facts and principles in some field. Its primary object is advancement of knowledge. It constitutes a scientific effort which is not aimed directly at some particular type product or procedure. Often the direction it takes cannot be anticipated.

From basic research has come many of the great developments of our age. Research into the properties of the atom came along before the atomic bomb was conceived. The discovery of the light-sensitive cell in the 1880's was an essential factor leading to today's electronics. Many plastic materials were discovered by researchers who had no conception of their practical uses. The initiator may think of basic research as the endeavor of abstract scientists devoted to explorations in many fields beyond the realm of practically. Industrial engineers recognize it as the seed from which future industry grows.

Applied Research (Intensive or practical) aims directly at some product, process or practical problem. It includes: market analysis, comprehensive investigation of competitor's product; studies of patent situations, past experiences, processes, materials, matters affecting the course of product development, and efforts to relate the findings of science or basic research to practical applications.

Applied research of some sort is a practical activity for the average industry. Many large companies, including General Motors, General Electric, Westinghouse, DuPont, Eastman Kodak and Telephone and Telegraph, conduct both basic and applied research and obtain additional assistance from outside agencies.

SUBJECT MATTER OUTLINE:

Type of Research:

A. Basic Research (Pure or Fundamental)

    1. Obtains new knowledge without reference to specific use.
    2. Discovers new facts and principles in some field.
    3. Aims directly at some particular type of product or procedure.
    4. Designs and conducts experiments
    5. Interprets results of experiments.

B. Applied Research (Practical or Intensive)

    1. Aims directly at some product, process or practical problem.
    2. Makes useful results of basic research including:
        a. Market analysis
        b. Comprehensive investigation of competitors' products.
        c. Studies patent situations, past experiences, processes, materials, and other matters affecting the course of product development.
    3. Re-designs and conduct's experiments.
    4. Interprets results of experiments made by basic research.

COUNSELOR INTERACTION:

1. Conduct one or more interviews with persons in research and development and relate information to individuals occupational choice.

2. Make a job survey in the community dealing with research. List name of jobs, services rendered, qualifications, working conditions, etc.

3. Reading of briefs from Junior Occupational dealing with jobs relative to ideas, people and animals, and things. Discuss those concerning research and development.

4. Organize into a research team and under the direction of a science teacher, carry out an experience to solve a research problem.

5. View and discuss films No. 1 and 4 as they relate to research.

Films:

a. Jobs in Atomic Energy, No. 1
b. Scientific Method in Action, No. 4

Filmstrip:

Moment of Discovery, No. 6

Booklet:

a. Should You Be A Scientist? No. 20

Briefs:

a. Junior Occupational Briefs, No. 13

INSTRUCTIONAL AIDS:

1. Films:

   a. Seven Guidepost to Good Design, No. 3
   b. Cavalcade of Fibers, No. 4
   c. Agriculture, Research And You, No. 8
   d. The Language of Drawing, No. 6

2. Drafting equipment:

   a. Drafting tables or Drawing boards
   b. T-squares
   c. Triangles 45° and 30° - 60°
   d. Drafting papers:

        1. Sketching
        2. Tracing
        3. Graph
        4. Construction

    e. Drafting Instruments kit

3. Models of some product

4. Charts:

    a. Chemistry of Petroleum Refining
    b. This is Oil Refining Oil For Energy - The Story of Manufacturing - Shell Oil Company

    c. How Basic Tools Created Civilization - Do All Company
    d. Mechanical Drawing Wall Chart

5. Some Products of Industry

6. Text: Bross, Irwin, D.J. Design For Decision New York: The Macmillan Company, 1965.

    Haws and Schaefer, Manufacturing In The School Shop, Chicago, Illinois: American Technical Society, 1966

7. General Industry Transparencies:

    a. Designers sketch possible solutions, evaluate them and make prototype drawings
    b. Prototype is Built on the Final Solution
    c. Prototype is Tested and Final Corrections Are Made
    d. Final Model is Inspected and Passed
    e. Detail and Assembly Drawings are Made For Production

STUDENT ACTIVITIES:

1. Have student or team of students plan and make sketches for a product to be produced in class.

2. Have student or team of students to conduct an experiment and investigate the best materials suitable for the product by use of research methods.

3. Have student or team of students to make a detail drawing of the product sketches after all information has been analyzed and finalized.

4. Have student or team of students to write a brief report on all decisions made about product that was selected.

5. Have student or team of students to list some ways to be used in making a market analysis.

TEACHER NOTES:

It is apparent that every good research organization must have certain elements if it is to survive:

1. The organization must have creative, intelligent, and versatile researchers.
2. It must have an administration, environment, and tools for the implementation of creative ideas into reality.
3. It must operate in a climate which permits the organization to explore the products of its creative research and development men.
4. It must make use of market surveys and information to assure that the results of its effort are worthwhile from a need and/or financial standpoint.

The ideal research and development organization, therefore, comprises men, environment and opportunities. The three components comprise almost any organization and the one which does not survive is in the selection of the type of men, the creation of a research environment, and the exploitation of the research opportunities which are available.

EVALUATION:

1. Applied or practical research aims:

   a. at some product, process, or practical problem.
   b. to discover new facts and principles in some field.
   c. at advancement of knowledge.
   d. none of the above.

2. Research may be either Basic or Applied.

3. Newly discovered facts and principles of nature are:

   a. guaranteed protection by court action.
   b. not patentable.
   c. can be protected under appropriate conditions.
   d. kept a secret.

4. What are the two classes of research? Cite one example of each.

   The two classes of research are basic and applied.

   The discovery of the light-sensitive cell in 1880 was an essential factor leading to today's electronics. (basic research) Market analysis (applied research)

LESSON PLAN (3).............SKETCHING

NOTE TO INSTRUCTOR:

Many feel that sketching is far more useful to the planner than is mechanical drawing or drafting. Most of the principles of graphic representation can be taught through sketches. At a later time you might want to introduce instrument drawing. This procedure makes it easier for the student to select an idea and make product selections.

OBJECTIVES:

At the conclusion of this lesson the student should be able to see how industries use freehand sketching to denote ideas and have some idea of the x, y and z axis as they are applied in industry.

INSTRUCTIONAL AIDS:

1. Straight edges

2. Pencils and paper

3. Clipboards

4. Charts

    a. Mechanical Drawing wall chart (F. Post Co.)
    b. Decimal equivalent and Tap Drill Sizes (L.S. Starret Co.)

5. Film:

    The Language of Drawing - State Film Library

6. Sample of some industrial product

7. Models of some product to produce in the class.

INTRODUCTION:

The work of the inventor, engineer, designer, craftsman, builder, and other would be hopelessly involved if there were not a language which all of these could understand. The language which is used by all people who build or service things is the universal graphic language.

SUBJECT MATTER OUTLINE:

I. The importance of a graphic language

    1. To industry

2. To other areas of work

3. To home owners and planners

4. To the student

    a. In reading books, magazines and newspaper
    b. In building things

II. Sketching is used by those in authority to convey ideas to others.

    1. Engineers make sketches for draftsmen to reproduce as tracings and blueprints.

    2. Draftsmen make sketches before making a drawing to plan and organize their work.

    3. Researchers make sketches of their ideas.

    4. Most ideas can be adequately presented by means of a sketch.

III. Sketch on paper with a pencil (demonstrate techniques)

    1. Horizontal, vertical, inclined and parallel lines. (Also, arcs and circles.)

IV. Sketch the following:

    A. Orthographic views (working drawings)

        1. Most frequency used drawing.

        2. Object - product that may be produced in class.

        3. Views - Top, Front and Profile.

        4. Estimate ratio of height to width of front of object and side.

        5. Lightly sketch object on paper.

        6. Using ratios estimated, outline all necessary views.

    B. Pictorial views (demonstrate each)

        1. Oblique

        2. Isometric

    C. Sketch in the detail.

        1. Sketch three views of an object to be made by class manufacturing.

V. Notes and dimensions:

1. Drawing alone is incomplete.
2. To convey meaning not otherwise indicated, notes and dimensions are necessary.

STUDENT ACTIVITIES:

1. Have students sketch some item in the school, home or community, but be certain that what they draw is something they can recognize.
2. Have students sketch three views of something they would like to construct in the class. Point out advantages of true size and shape as applicable.
3. Have students sketch or make a graph from sales in newspaper: a bar or circle graph.
4. Have students dimension and place necessary notes on sketches.

LESSON PLAN (4)...............DEVELOPMENT

NOTE TO INSTRUCTOR:

Development applies to scientific and technological knowledge to create new or modify existing products and processes so they will best achieve stated performance and economic requirements.

Development is the application of knowledge and facts to create products.

1. Advanced development makes valuable uses of past knowledge.
2. The product development or improvement poses questions such as what materials might be used and which would be best along with developing a functional design and model.
3. Process development or improvement would determine what type of process and which process will be used.
4. Redevelopment for reducing cost and improving quality-through reappraisal and possible redesign, product can be improved and also the priced lowered.

Advanced Development demonstrates working principles or systems of principles of prospective products or processes by means of theoretical or tangible operating models. It presents models or some type of evidence of potential valuable applications of facts that have been known but can be used for the "new product."

New Product Development and Product Improvement Design is the development of new and improved products so they best achieve stated performance requirements. These areas are responsible for planning and even producing a prototype so the designs, specifications, and other requirements may be met.

In the planning of this product the development department must be aware of the many decisions that must be made. They must determine the size, shape, and finish. They must be aware of the best material to use while including throughts on costs to consumer and producer. Tests must be made to solve many of these questions. Different types of models and prototypes must be constructed to show different designs and techniques to give tangible evidence of the variations of the problem.

This area also designs new and improved manufacturing systems, operations, and facilities so that the best stated technical performance requirements are achieved.

The reappraisal and redesign of products with respect to materieals, appearance to reduce costs and improve quality is termed product re-development.

SUBJECT MATTER OUTLINE:

I. Development

  A. New product development and product improvement:

    1. Design new and improve existing products.

    2. Develop experimental models - prototypes.

    3. Prepare functional designs and inspections.

    4. Conduct engineering experiments.

  B. Advanced Development

    1. Improve products

    2. Demonstrates potentially valuable applications of nature's laws.

  C. Product Re-development For Cost Reduction:

    1. Re-appraises and redesigns products with respect to:

      a. Material
      b. Appearance
      c. Performance and manufacturing requirements to reduce cost and improve quality.

    2. Conducts engineering experiments.

3. Develops experimental models (if needed)

4. Revises designs and specifications.

COUNSELORS REACTIONS:

Field trip to some industry or industries to observe and study present and future work of research workers.

Have students evaluate, interpret, and communicate results of product designed or redesigned.

Utilize the service of a customer service director or commercial education teacher to give customer's appraisal of product developed.

Brochure: The Technicians and Tomorrow, No. 21

Pamphlet: Market Research and Management, No. 7

INSTRUCTIONAL AIDS:

I. Films:

1. American Look - Introductory and Development Areas, No. 7
2. Wonderful World of Quality Paints, No. 8
3. Change For The Better, No. 9
4. Seeing Is Believing, No. 13
5. Sketches of Product From Applied Research
6. Product Plan Sheet
7. Material Samples - Rough, dressed and finished. (AFPI)
    a. Common used woods - soft, hard, veneer, laminated
    b. Basic or common used metals
    c. Plastic that is available
    d. Insulations:

        (a) Types (b) Uses

    e. Filmstrips:
        1. Why Research
        2. There Is A Lot of Reason to Research

8. Text: Lindbeck and Lathrop, General Industry Manufacturing In The School Shop

STUDENT ACTIVITIES:

1. Development section will devise a product to meet the needs of a problem.
2. Make a list of improvements to the product that will be made by the students.
3. Students write up principles or system to be used in practical applications while developing the product.
4. Students may make an analysis of materials that possibly could be used to determine the best one.
5. Have students make prototypes to show their ideas to assist in production.
6. Let students experiment with the processes to determine the best one for the product.
7. Students may set up experimental process to see how it runs.
8. Students may evaluate product in terms of purpose appearance and customer cost.
9. Students may revise design and specification if necessary.
10. Students may evaluate processes in terms of quality of job and producer cost.
11. Students may revise new models to show new ideas that may be used.

TEACHER NOTE:

Special Note: The necessity of providing instruction and learning experience necessary for those machines and tools to be used during prototype development cannot be overstressed. Refer to texts on tool and machine operation.

Development to create methods and tools to produce a useful product or more efficiency in production.

Advanced Development presents models or some type of evidence of potentially valuable applications of facts that have been known but can be used for the new product.

New Product Development and Product Improvement: Different type models or prototypes must be constructed to show different designs and techniques to give tangible evidence of the variations of the problem. All these must be considered in the solution of exactly what type product to produce.

New Process Development and Process Improvement, often a model plant is built and operated to see how successful the process is. Specifications and designs for the process are gathered and through these steps the process is determined.

Product Redevelopment For Cost Reduction: Construct models so they have tangible evidence. Tests will again be made on the phases of product or production in question. The design and specifications will definitely need revising if changes are made.

Product redevelopment reappraises and redesigns products with respect to materials, appearance, performance and manufacturing requirements to reduce costs and improve quality.

LESSON PLAN (4)...............PRODUCT ENGINEERING

NOTE TO INSTRUCTOR:

Product Engineering is specifying, interpreting and modifying for manufacture and marketing purposes the nature, performance, and quality characteristics of product.

This may be a person or group of persons in industry that would specify certain materials, processes and procedures which have to do with the manufacture of the product. These persons will also check for performance and quality characteristics of the product before it is manufactured in any great quantity.

Product Design is specifying by means of drawings, instructions, standard practices and otherwise, the shape, composition, performance and quality characteristics required of products.

Engineering Testing: verifying intended product compliance with established standards for quality, performance, reliability, manufacturability and serviceability.

These engineers in industry evaluate products for their performance, reliability, quality and servieeability. In addition to this, engineers evaluate the manufacturing systems, operations, and facilities to help manufacture the best product for the least possible cost. They make charts and graphs to indicate the performance of the products and the performance of the manufacturing system to produce the product.

Sales Assistance provides engineering aid in adapting products to customers' requirements.

This section prepares estimates and proposals on nonstandard products. They also consult with the engineers and designers on product applicability. These are persons in industry that work with sales representatives and the manufacturing firm to assure the proper installation of the product for the best service results.

Factory Follow-Up provides engineering assistance to eliminate manufacturing difficulties.

When there is a change in design by the designers, factory follow-ups is responsible for getting the changes to the production lines.

OBJECTIVES:

1. Students will be able to make an evaluation of a saleable product that will meet the conditions of effective competition.
2. At the conclusion of this lesson students should be able to create plans for a product to meet new needs, or new models of old products to serve new uses from a number of sources.
3. Students should be able to make some determination of the attributes of the finished product.
4. Students should be able to evaluate the values that are dependent on the service the product is expected to render.
5. Students should be able to write a brief report on how industrial testing functions make contributions.
6. Students should be able to evaluate testing functions as they apply to the product, materials, and other classifications.
7. Students should be able to evaluate, modify and consolidate the individual estimates to get a product sales forecast.

INTRODUCTION:

There are two major design functions, product design and process design. Product design determines what attributes the finished product should have to enable it to give the required customer service. Process design determines the methods and conditions that are required to make a product that has these attributes. Both designs functions must be realistic in dealing with the requirements of quantity, time and cost. Both functions result in or affect the determination of all basic types of standards in a manufacturing enterprise. These functions therefore affect all classes of management decisions, directly and indirectly.

Subject Matter Outlines:

I. Product Engineering

A. Product Design:

1. Specifying by means of:

    a. Drawing
    b. Instructions
    c. Standard practices
    d. Shape
    e. Composition
    f. Performance
    g. Quality characteristics required of products

2. Prepare working drawings.

3. Prepare instructions, standard practices, materials, specifications and the like.

B. Engineering Test:

1. Verifying intended product compliance with established standards for:

    a. Quality
    b. Performance
    c. Reliability
    d. Manufacturability
    e. Serviceability

2. Evaluate product performance, reliability, quality and serviceability.

3. Evaluate manufacturing systems, operations and facilities.

C. Factory Follow-up:

1. Provide engineering assistance to eliminate manufacturing difficulties.

2. Interpret product designs and specifications.

3. Define manufacturing problems.

4. Secure product design and specification changes.

5. Provide engineering advice.

D. Sales Assistance:

1. Provide engineering aid in adapting products to customers use requirements.

2. Prepare estimates and proposals on nonstandard products.

3. Consult on product applicability.
4. Direct product installations.

COUNSELOR INTERACTION:

Begin filling out student record book in "Work"

Pamphlets:

1. Engineering, No. 11
2. Engineering Development, No. 10
3. Industrial Engineering Management, No. 9
4. System Analyist: A software specialist, No. 16
5. Student Workbook: Widening Occupational Roles Kit, No. 14

INSTRUCTIONAL AIDS:

Films:

1. A Better Way, No. 10
2. Cross Section of America, No. 11
3. Men and Machines, of, No. 12
4. Aluminum Is Not Only Aluminum, No. 13

Filmstrips:

1. Industrial Engineering, SVE A636-2
2. Production Engineering, SVE A636-3

Sample of various types of materials: Wood, wire, metal, plastic, paper, etc.

Charts:

1. How Steel Is Made - U.S. Steel
2. Mechanical Drawing Wall Charts (F. Post Co.)
3. Decimal Equivalent and Tap Drill Sizes (L.S. Starrett Co.)
4. Products of American Forest - American Forest Products Industries, Inc.

STUDENT ACTIVITIES:

1. Have students organize into groups and design a product that can be produced in the laboratory.
2. Have students test product to see if it holds up to the standards set when the product was designed.
3. Have students evaluate their product that they have designed and produced to see if they have produced a quality product.
4. Have students list and discuss the problems involved in manufacturing their product.
5. Have students make out a list including instruction, standard practices, specifications, and materials to be used in producing the product.
6. Have students study and compare the quality of two identical products manufactured by different corporations.
7. Have students invite a sales assistance from an industry in to talk about product installation.
8. Have students study and then list some of the qualifications of a good sales assistant.
9. Have students involved in product engineering help provide advice on manufacturing problems.
10. Have students list and discuss the manufacturing problems in their group.
11. If changes are needed, have students follow the procedures set by industry for corrections.

TEACHER NOTES:

A. The Functions of Product Design Are:

   1. Experimentation
   2. Establishing preliminary specification
   3. Making preliminary sketches
   4. Making models or prototypes
   5. Testing the models
   6. Analyzing the performance of the models
   7. Making the final drawings

B. The Function of Product Engineering:

1. Instigation of ideas
2. Planning on the proejcts
3. Selection of the projects
4. Establishment of the priority of projects
5. Programming of projects
6. The controlling of projects

C. Engineering Tests:

1. Saleable product, that will meet the conditions of competition.
2. Requests for new products to meet new needs, or new models of old products to serve new uses.
3. Involves considerations of many marketing, manufacturing, and financial problems.
4. Coordinates the work of the plants in the technical design and development of product.
5. Participates in long-range company planning with particular reference to technical developments, that may affect new-product offering and requirements for new facilities.

D. Sales Assistance:

1. Make sales forecasting with prediction of some future time periods.
2. Forecasting methods with the distinguish characteristics basis:
    a. Method of coordinating opinion
    b. Statistical forecasting techniques
    c. Method based directly on market research
3. Promotes selling activities that supplement both advertising and personal sellings.

EVALUATION:

1. The product engineering should:
    a. Prepare working drawings

b. Evaluate product performance, reliability and serviceability.

c. Secure product design and specification changes.

d. Prepare estimates and proposals on nonstandard products.

2. The product design should involve:

   a. Prepare working drawings.

   b. Evaluate product performance, reliability and serviceability.

   c. Secure product design and specification changes.

   d. Prepare estimates and proposals on nonstandard products.

3. There are two major design functions, product design AND process design.

T F 4. One of the functions of factory follow-up is to secure product design and make specification changes when necessary.

LESSON PLAN (5)...............PATENT FOR NEW PRODUCT

NOTE TO TEACHER:

After the search has been completed, it is necessary to determine the exact extent of coverage that can be obtained on the original ideas or inventions. This is the final phase of the determination as to whether or not it is desirable to file patent applications. Here the advice of a good patent attorney is very valuable. They, with their background of experience in patent matters, probably be able to guide the inventors in making an itelligent decision in this matter. The actual preparation of the patent should be done by those experienced with the rigid requirements pertaining to drawings, descriptions, which are specified by the patent office.

OBJECTIVE:

At the conclusion of this lesson the student should be able to make out a patent audit sheet and list facts required for a patent to be granted to a new product.

INTRODUCTION:

The patent laws require that patent specifications provide an adequate description of the invention. This description should be sufficiently clear so that a person skilled in the field of applicability of the patented item can make and use it. The patent must also contain definite statements or claims which describe the uniqueness of the invention and which distinguish it from other patents already in force.

SUBJECT MATTER OUTLINE:

I. Patent For New Product

  A. Product Audit Sheet

  B. Product Audit Conference

    1. Those permanently rejected

    2. Those set aside for reconsideration

    3. Those selected for further screening

  C. Facts about the New Product

    1. Facts are needed to support the audit

    2. Conclusions concerning the product

      a. Is it practical

      b. Can it compete

      c. Can it be protected by a patent

  D. Data Sheet on New Product

  E. Patent Survey

    1. Patentability and validity

    2. Patent infringement survey

    3. Conflicting patent rights

INSTRUCTIONAL AIDS:

1. Pamphlet: The Story of The American Patent System
   U.S. Printing Office

2. Chart: Patents Issued Since 1790

3. Copies of:

   a. New Product Audit Sheet
   b. New Product Data Sheet
   c. New Product Survey Sheet

STUDENT ACTIVITIES:

1. Have students construct and fill out a New Product Audit Sheet centered around product made in class.
2. Have students write a brief report explaining the importance of having a new product patent.

TEACHER NOTE:

Under the patent system, American Industry has flourished. New products have been invented, new uses for old ones discovered, and employment given to millions.

Under the patent system a small, struggling nation has grown into the greatest industrial power on earth.

EVALUATION:

1. What is a patent?

   ANSWER: A patent is a grant by the Federal Government giving an inventor the right to exclude all others from making, using, or selling his invention within the United States, and its territories.

2. Patents related to mechanical, chemical or electrical are good for:

   a. four, seven, or fourteen years
   b. seventeen years
   c. no certain number of years
   d. no restriction

3. Patents related to design are good for:

   a. four, seven, or fourteen years
   b. seventeen years
   c. no certain number of years
   d. no restriction

PRODUCTION

INTRODUCTION

> "Developing the most economical methods and plans for manufacturing authorized products; co-ordinating the required manpower; securing and co-ordinating materials, facilities, tools, and utilities; producing products, and consigning them to the marketing activity or the customer."

Production may be broadly defined as the actual making activity area of industry which is concerned with the changing of natural resources into useful things.

This unit on production is one of the most important units of the study of manufacturing. In no way is it implied that production is more important than another area of activity, but all other activities of manufacturing either lead to the production department or away from it. Planning, Finance, Personnel, Engineering, Management and etc. are all supported by the efforts and outcomes of production.

Production may be divided into six sub functions within an industry (1) plant engineering (2) industrial engineering (3) purchasing (4) production planning and control (5) manufacturing (6) quality control.

The six sub functions of production should not be studied individually, but must be intergrated, and each pertinent activity of the given sub function must be introduced at the proper time.

The following model points up the instructional topics, and a lesson plan follows the model which further details the use of each activity.

(Show Film #1 "The DuPont Story")

(Show Film #8 "Story of Productivity, the")

MODEL PRODUCTION

Week	Instructional Topics	Instructional Aids	Student Activities
	I. Plant Engineering A. Utilities Design and operation B. Facilities design and specification C. Maintenance D. Plant equipment control	SVE Filmstrip #A636-4 "Plant Engineering"	Draw a plant layout designating the placement of capital equipment
	II. Industrial Engineering A. Methods Study B. Plant layout C. Work measurement D. Materials handling study E. Tool, jib, fixture and pattern manufacture and repair	SVE Filmstrip #A636-2 "Industrial Engineering	Study detail drawings and design necessary jigs, fixtures and patterns
	III. Purchasing A. Buying B. Purchase expediting C. Purchase records and files D. Purchase research E. Salvage sales	General Industries Slides #17-18	Sample vendors and obtain prices of materials needed

2

MODEL PRODUCTION

Week	Instructional Topics	Instructional Aids	Student Activities
	IV. Production Planning and Control A. Traffic B. Factory receiving C. Factory shipping D. Materials Procurement E. Operation scheduling F. Tool, jig, fixture and gage procurement G. Production instructions distribution H. Dispatching I. Production expediting J. Performance reporting K. Storeskeeping L. Stores control	SVE Filmstrip #A-636-3 "Production Engineering"	Compile a package of engineering specifications to include blueprints, bills of material, shop order and route sheet
	V. Manufacturing A. Part manufacture B. Subassembly C. Final assembly D. Service and repair	SVE Filmstrip #A636-5 "Manufacturing"	Learn operation and safety procedures for the machines and tools to be utilized in making the product. Perform necessary operations to produce parts for a product.
	VI. Quality Control A. Control methods development B. Gage Control C. Inspection and test D. Customer complaints E. Salvage	SVE Filmstrip #A636-6 "Quality Control"	Establish ways of limiting production of unacceptable parts

Chart of Instructional Topics for:

PRODUCTION

PLANT ENGINEERING	INDUSTRIAL ENGINEERING	PURCHASING	PRODUCTION PLANNING AND CONTROL	MANUFACTURING	QUALITY CONTROL
Utilities Design and Operation	Method	Buying	Traffic	Part Manufacture	Control Methods Development
Facilities Design and Specification	Plant Layout	Purchase Expediting	Factory Receiving	Subassembly	Gage Control
Plant Equipment Control	Work Measurement	Purchase Records and Files	Factory Shipping	Final Assembly	Inspection and Test
Maintenance	Materials Handling Study	Purchase Research	Materials Procurement	Service and Repair	Customer Complaints
	Tools, Jigs, Fixtures and Patterns Manufacture and Repair	Salvage Sales	Operation Scheduling		Salvage
			Tool, Jig, Fixture and Gage procurement		
			Production Instruction Distribution D Dispatching		
			Production Expiditing		
			Performance Report Stores Keeping Stores Control		

SUGGESTED LESSON PLAN. . . . . PRODUCTION

NOTE TO THE INSTRUCTOR:

Production is only one activity area of the manufacturing process and must be approached with this fact ever in mind. Production is charged with the responsibility of producing a product using the most economical methods and plans. This responsibility is fulfilled by organizing the department into functional groups. One approach to this would be: plant engineering, in charge of specifying or approving, installing, maintaining and occasionally constructing the buildings, utility services, and facilities required to produce the product; industrial engineering, in charge of planning the utilization of man, facilities, tools, jibs and fixture to attain the desired quantity and quality of output at minimum cost; purchasing, in charge of securing when required and at minimum cost the quantity and quality of materials, supplies, services, and equipment needed to operate the company; production planning and control, charged with preparing, issuing, and encouraging compliance with schedules of the men, materials, facilities, instructions, and all additional items required to complete manufacturing orders so they will be available when and where required: manufacturing, charged with making products for sale by changing the shape, composition, or combination of materials, parts or subassemblies; quality control, in charge of establishing acceptable limits of variation in the attributes of a product and reporting the status of maintaining the product in respect to those limits.

(Show Film #2 "Productivity - Key to American Economic Growth")

BEHAVIORAL OBJECTIVES:

1. The student will observe five in plant operators and accurately record the time each operator spends on a single operation. Then make an analysis of the operation and write suggestions as to how the operation may be made more efficient.

2. Given a prototype the student will make an analysis of and list the operations and processes necessary for its production.

3. The student will make drawings of necessary jibs, fixtures, and patterns for production.

4. The student will construct necessary jigs, fixtures, and patterns for production.

5. The student will construct a flow chart designating the location of equipment and sequence of processes from receiving to shipping.

6. The student will be able to list at least ten methods of material handling.

7. Students will list six rules governing the selection of equipment utilized in material handling.

8. The student will interpret his understanding of equipment safety by scoring 100% (more than one test if necessary after further instruction) on a teacher made test.

9. The student will compile a list of the utility services available in and to the plant.

10. The student will sketch a floor plan of the plant showing the location of each utility service.

11. The student will develop a form to be used as facilities maintenance records.

12. The student will demonstrate his ability to keep maintenance records by maintaining a record of all utility repairs and services.

13. The student will develop a system for maintaining a clean and safe plant. The system is to be developed to include all students in the plant within a time limit of five minutes to the instructors satisfaction.

14. The student will, on his floor plan of the plant, locate and identify all capital equipment.

15. The student will compile a list of specifications of capital equipment from information presented him by the instructor.

16. The student will study and be able to list at least ten duties of a purchasing agent of an industry.

17. The student will express his understanding of uninterrupted flow of materials and services by listing at least five ways an industry would lose profit should production cease due to lack of materials and/or services.

18. The student will, through various means, compile a list of two suppliers of a given material and obtain price quotations from each.

19. The student will devise a purchase agreement which will contain sufficient amounts of material with which to produce a specified product.

20. The student will establish a method of disposing surplus items or by-products to maximize profit for the industry.

21. The student purchasing agent will keep student management informed of developments concerning materials which could affect company profit or performance.

22. The student will contact at least two freight carriers and obtain rates and shipping routes of each.

23. The student will prepare and acceptable package in terms of freight carrier requirements and product being shipped.

24. The student will, for educational benefit, assist in unloading carriers and correlate shipping tickets with purchase orders and place them on file and inform those affected.

25. The student will prepare a requisition form to obtain from storage sufficient amounts of materials to produce a given number of selected products.

26. Utilizing recommendations of plant engineering the student will prepare a flow chart in accordance with equipment load records and specify time and place for every activity.

27. The student will analyze operation instruction sheets from industrial engineering and requisition needed tools, jigs, fixtures, and patterns from storage.

28. The student will, at the end of each work session, inventory all parts at each work station to determine compliance with schedule and report schedule deviations as well as manufacturing accomplishments to those concerned.

29. The student will perform necessary operations to produce parts and combine parts to produce finished products to conform to standards established by quality control.

30. The student will adjust improperly manufactured or worn parts and products to meet quality control standards, after having been rejected.

31. The student will establish adequate inspection methods as well as designate inspection locations and analyze product quality in accordance with limitations specified by engineering.

32. The student will, in accordance with an established schedule, appraise quality of products, produce and maintain control charts and indicate acceptance or rejection of a product.

33. The student will communicate effectively to others about his vocational abilities, interests, and plans, orally or in writing.

34. The student will demonstrate appreciation of the importance of all work in our society.

35. The student will elicit and consider suggestions and evaluations regarding given work performance.

36. The student will participate in individual and group experience which contributes to personal development (e.g. discussion, reading, observation.)

37. The student will demonstrate the ability to depend on others to be depended upon in the work environment.

38. The student will seek information about what skills are needed to get a preferred job.

INTRODUCTION:

At this point students should have completed a very important phase in their study of manufacturing. They should have been orientated as to the objectives of the course and completed their first product. Further, the student should have been informed of the organization of manufacturing as well as the functions of the personnel, finance, and research and development departments, which leads to the functions and study of production in the following unit.

SUBJECT MATTER OUTLINE:

I. Plant Engineering (specifying or approving, installing, maintaining, and occasionally constructing the buildings, utility services, and facilities required to produce the product.)

    Show SVE Filmstrip #A636-4 "Plant Engineering"

    A. Utilities design and operation (providing all electricity compressed air, water, heat, and similar services needed)

        1. Analyze utility service requirements

        2. Design or specify utility service system

        3. Direct and approve utility service installations

        4. Operate utility service systems

    B. Facilities design and specification (specifying or approving all factory and office equipment and buildings and directing their proper installation)

        1. Analyze facilities requirements

        2. Design or specify facilities

        3. Direct or approve facility installation or construction.

C. Maintenance (installing and maintaining buildings, facilities, and utility services in safe operating condition and occasionally constructing buildings and facilities)

   1. Maintain facilities, utility services and grounds
   2. Relocate and install facilities and utility services
   3. Clean buildings
   4. Keep repair records
   5. Construct minor facilities and buildings

D. Plant equipment control (maintaining specifications and locations records on all capitalized equipment)

   1. Keep location records of capital equipment
   2. Keep equipment specifications
   3. Identify capital equipment

COUNSELOR INTERACTIONS:

Have students study in detail the specific jobs that seem to fall within their range of interests, abilities, and personality patterns. Ask students to give oral or written reports on the occupations which they have studied intensively.

INSTRUCTIONAL AIDS:

Books and Booklets

1. Lifton, Walter M. Keys to Vocational Decisions
   Science Research Associates, Inc., 1964
   Chicago, Illinois
   This text combines ten of the SRA Guidance Series Booklets in a sequence that leads the student to learn about himself, his study habits, skills, future education and career.

2. Hill, Wendell P. Planning My Future
   Science Research Associates, Inc.
   Chicago, Illinois

   This text contains self-administered tests and inventories that help guide the student in making preliminary educational as well as vocational decisions.

3. SVE Filmstrip #A636-4 "Plant Engineering"
4. General Industries Slides #'s 7,8,9,10,20,21,22,23,24,27,38
5. Film #15 "Our Mr. Sun"

STUDENT ACTIVITIES:

1. Analyze the utility service requirements of the plant.
2. Make a list of all utility systems used in the plant.
3. Check to see how each was installed and how to operate each.
4. Maintain records of all facility repairs.
5. Make a record of the modifications of any facility or utility.
6. Maintain a clean plant using a predesigned plan.
7. Students will fill out an inventory chart.
8. Students will prepare a list of the equipment. They will also state the condition that the tools and equipments are in.
9. Fill out maintenance reports on the machines.
10. Draw a plant layout, designating the placement of the capital equipment.

TEACHER NOTES:

1. Point out the major utility services supplying the plant.
2. Point out that the Industrial Arts Lab will be the "Plant."
3. Point out why we have different utility services.
4. Utilities might need to be modified.
5. Modification of facilities, if needed should be discussed.
6. The types of records needed to identify capital equipment, equipment specifications and the location of capital equipment be established.
7. Repair records should be established.
8. A system for cleaning the facility should be created and posted.

II. Industrial Engineering (planning the utilization of man facilities, tools, jigs, and fixtures to attain the desired quantity and quality of output at minimum cost)

  A. Methods study (establish the best methods of performing necessary direct or indirect production tasks excepting materials handling)

    1. Establish operations and processes required

    2. Establish facilities required, design tools, jigs, fixtures and patterns

    3. Establish standard job motion

  B. Plant layout (establishing the best physical arrangement of facilities, utilities, and work areas)

    1. Analyze operations and processes required

    2. Analyze facilities and utilities required

    3. Establish space requirements

    4. Select adequate plant area

    5. Establish relationships of facilities and utilities

  C. Work measurement (establishing time standards for performing necessary direct and indirect production tasks)

    1. Measure operation times

    2. Appraise performance

    3. Compute allowed time

  D. Materials Handling Study (establishing the best ways of transporting within the company its products or items used in their manufacture

    1. Analyze operations and processes

    2. Establish equipment

  E. Tool, jib, fixture, and pattern manufacture and repair (producing and maintaining the required tools, jigs, fixtures, and patterns)

    1. Produce authorized tools, jigs, fixtures, and patterns

2. Repair tools, jigs, fixtures and patterns

3. Maintain custody of tools, jigs, fixtures and patterns

COUNSELOR INTERACTION:

Encourage students to explore surrounding industries. Craftsmen and other workers may be invited to discuss their jobs before the class or specific members of the class might visit selected industries and report to class on their experience. Students should formulate questions to be asked of persons in industry. These questions should be designed to explore the work requirements and job opportunities and to learn about the psychological and sociological dimensions of work-role relationship, social demand on the worker, satisfactions, degree of independence, etc.

INSTRUCTIONAL AIDS:

1. SVE Filmstrip #636-2 "Industrial Engineering
2. General Industries Slide #25
3. Film #5 "Men and Machines, Of"
4. Film #20 "Industrial Arts: A Safe Shop"
5. Film #21 "Tools"
6. Film #7 "Hough Store, The"
7. Film #22 "Machines"
8. Film "23 "ABC of Tools, The"
9. Film #24 "Don't Drop Your Guard"

STUDENT ACTIVITIES:

1. Methods of operations and processes requirements should be studied to find the best method of performing necessary operations for the production of a product.
2. Detail drawings should be studied and necessary jigs, fixtures, and patterns should be designed.
3. A plant layout could be drawn includes machines and tools in accordance with facility and utility study and modification.

4. Plan a flow chart.

5. Keep time chart operations of production in order to standardize work.

6. Study and recommend the best materials handling methods.

7. Inspect the plant and list those items which are unsafe.

TEACHER NOTES:

1. Point out the difference between direct and indirect production tasks.

2. Point out the difference between production and materials handling.

3. Demonstrate necessary tools and machines which are essential to the production of jigs and fixtures and patterns.

4. Emphasize safety measures.

5. Demonstrate ways of establishing time standards.

6. Discuss various ways of moving materials within the plant.

7. Discuss working drawings of the product to be manufactured and point out various and necessary fixtures and jigs and patterns to be made.

8. Demonstrate plant layout on the chalkboard being sure to include all aspects in the make up of a flow chart and see that one is made.

9. Remember!! The arrangement of machines, tools and functions should be made in accordance with existing or modified utilities, facilities and materials handling expediency.

III. Purchasing (securing when required and at minimum cost quantity and quality of materials, supplies, services, and equipment needed to operate the company)

   A. Buying (locating and negotiating with vendors to secure needed items or services of the desired quality, in the desired quantity, at the desired time, at a minimum cost)

      1. Locate suppliers

      2. Secure quotations

      3. Select supplier

      4. Prepare purchase agreement

   5. Advise on specifications for purchased items

B. Purchase expediting (seeing that purchased items and services arrive as promised by vendors)

   1. Analyze need for purchase items

   2. Secure items when required

C. Purchase records and files (maintaining vendor catalogs, quotation requests, purchase orders, material specification, and the like)

   1. Keep file of purchase agreements

   2. Keep library of supplier catalogs

   3. Keep file of supplier quotations and records

D. Purchase research (analyzing market trends, purchased items usage, buying methods, and the like and recommending improved purchasing practices)

   1. Analyze market statistics and purchasing practices

   2. Recommend courses of action

E. Salvage sales (securing purchasers for items not in regular line of products)

   1. Secure purchasers for by-products and obsolete or surplus items

   2. Determine methods of disposal for items not sold

COUNSELOR INTERACTION:

Let students develop a procedure for evaluating performance and thereby gain an appreciation for the standards industry requires.

Provide class discussion to share observations, experiences, and information. Rotate leadership role in group discussions.

INSTRUCTIONAL AIDS:

1. General Industries Slides #'s 17, 18

STUDENT ACTIVITIES:

1. From the working drawings compile a list of materials and services needed to produce the product.
2. Consult "Yellow Pages" of the telephone directory and make a list of suppliers of needed materials
3. Check vendor catalogs and compile list of needed materials.
4. Create a records keeping system for vendor catalogs, quotation requests, purchase orders, materials specifications, etc.
5. Sample vendors and obtain prices of materials needed.
6. Prepare purchase agreements for enough materials and supplies to produce the product.
7. Devise a method of disposing of by-products or surplus items.
8. Select a material which is usually advertised in a newspaper and record prices weekly for approximately six weeks and determine the amount of increase or decrease in the price.

TEACHER NOTES:

1. Point out that we must have quality materials in the quantity needed at a minimum price.
2. Point out difference between a firm contract and an estimate.
3. Emphasize the importance of writing the exact specifications.
4. Discuss purchased parts as opposed to parts that we must construct or produce.
5. Stress the importance of accurate record keeping.
6. Emphasize the importance of analyzing market trends before submitting a purchase order.
7. Surplus items must be taken care of and turned into a profit if possible, so note and discuss this.
8. Be sure to use a vendor that can and will make delivery on time.

IV. Production Planning and Control (preparing, issuing, and encouraging compliance with schedules of the men, materials, facilities, instructions and all additional items required to complete manufacturing orders so they will be available when and where required)

   A. Traffic (specifying and securing transportation media that best satisify the receiving and shipping requirements of the company)

   1. Forecast freight rates
   2. Specify routings and carriers for purchased and sold items

B. Factory Receiving (accepting shipments from vendors, reporting on items received and disposing of them as authorized)

   1. Unload carriers
   2. Correlate receipt with orders
   3. Communicate data concerning receipts

C. Factory shipping (preparing products for shipment to the customer or to storage, consigning them to carriers, and reporting their actions to those concerned)

   1. Prepare items for carriers
   2. Load carriers
   3. Communicate data concerning shipments

D. Materials procurement (supply when needed all direct and indirect materials required to complete an order)

   1. Analyze sales orders and bills of materials.
   2. Issue requisitions

E. Operation scheduling (specify the most practicable combination of where and when to perform every activity required to complete an order)

   1. Maintain equipment load records
   2. Specify best alternative processes
   3. Specify time and place for every activity

F. Tool, Jig, fixture, and gage procurement (supplying when needed all facilities, tools and gages required to complete an order)

   1. Analyze operation instruction sheets
   2. Requisition needed tools, jigs, fixtures, and gages

G. Production instruction distribution (issuing communication media to guide and collect information on the performance of every task required to complete an order)

1. Collect or prepare all instructions and related papers.
2. Reproduce required copies
3. Distribute copies to affected areas.

H. Dispatching (initiating production tooling by releasing production planning instructions to those affected in accordance with established time schedules and task sequence)

1. Issue paperwork to those concerned
2. Verify time schedules and task sequences

I. Production expediting (aiding manufacturing activities to to follow the schedule established by the production planning function)

1. Investigate compliance with schedule
2. Report schedule deviations to those concerned

J. Performance reporting (advertising of production accomplishments relative to instructions issued)

1. Collect data on work performed
2. Report manufacturing accomplishments

K. Storeskeeping (protecting and issuing when authorized, items used to produce a product, perform a service, or operate a company)

1. Receive items
2. Protect items
3. Issue stocked items

L. Stores control (establishing what, other than finished products made for stock is to be warehoused, how much of it and where, as well as for implementing these decisions through records and requisitions)

1. Determine economic lot quantities
2. Determine reorder quantities
3. Standardize stocked items
4. Plan storage area locations
5. Requisition stocked items

INSTRUCTIONAL AIDS:

1. SVE Filmstrip #A636-3 "Production Engineering"
2. General Industries Slides #'s 26,20,32,33,34,35,36 and 37
3. Film #3 "Air Cargo"
4. Film #18 "Future In Steel"
5. Materials handling symbols
6. Examples of: way bill, tracing report, and loss or damage claim (obtain from local transport company.)
7. Materials handling symbols:

   A. Large circle = operation
   B. Small circle = transportation
   C. Square = Inspection
   D. Triangle = Permanent storage
   E. Triangle inside another triangle = temporary storage

STUDENT ACTIVITIES:

1. Obtain rates from local freight lines.
2. Procedure necessary for jigs, fixtures, patterns and gages.
3. Devise a customer order.
4. Devise a sales stock, and/or shop order.
5. Devise one each of the following: route sheet, load chart, schedule chart, and job ticket.
6. Prepare a bill of laden.
7. Compile a package of engineering specifications to include blueprints, bills of materials, shop order and route sheets.
8. Prepare a package for product to be produced.
9. Create a method of storeskeeping and stores control.
10. Assist in unloading carriers (delivery trucks)

TEACHER NOTES:

1. Discuss traffic patterns of your locality.
2. Discuss receiving and shipping procedures
3. Discuss charts: load, route, scheduling, and job ticket.

4. Discuss procedure for work simplifications: fixtures, jigs, patterns, and gages.

5. Discuss orders: customer, sales, stock and shop.

6. Discuss engineering specification.

7. Discuss measurements of effectiveness and performance reporting.

8. Discuss procedures for storeskeeping and stores control.

9. Discuss method of packaging.

V. Manufacturing (making products for sale by changing the shape, composition, or combination of materials, parts or subassemblies)

   A. Part manufacture (creating basic units of a complete product)

      1. Check equipment

      2. Produce parts

   B. Subassembly (joining two or more parts to form a portion of a complete product)

      1. Combine parts

      2. Preliminary

   C. Final assembly (joining two or more parts or subassemblies to form a complete product)

      1. Produce finished products

      2. Preliminary check

   D. Service and repair (reworking worn or improperly manufactured products, subassemblies, or parts to meet established quality specifications)

      1. Repair improperly manufactured parts and products

      2. Repair or replace worn parts and products.

NOTE: The necessity of providing instructions and learning experiences necessary for machine and tool manipulation cannot be overstressed. Training for operation and safety procedures on a machine or tool in relation to the task to be accomplished precedes all operations in industry.

COUNSELOR INTERACTION:

Give the students an opportunity to instruct others when he has learned a new operation and to test and improve his ability to give instructions.

When a student shows interest or skill in a particular operation performed in class, he should be encouraged to become familiar with the occupation in which the operation is performed. This may be accomplished by having him study job descriptions to identify related occupations or by letting him interview local industrial firms to find out what job opportunities are available for a worker with this skill and interest.

INSTRUCTIONAL AIDS:

1. SVE Filmstrip #A-636-5 "Manufacturing"
2. General Industries Slides #'s 11,28, and 29
3. Film #4 "American Road"
4. Film #10 "Die Casting -- How Else Would You Make It"
5. Film #11 "Drama of Metal Forming"
6. Film #12 "For Every Wheel That Turns"
7. Film #13 "Heart of the Matter"
8. Film #17 "Hull 1679"

STUDENT ACTIVITIES:

1. Perform necessary operations to produce parts for the product.
2. Combine parts to produce finished product.
3. Repair improperly manufactured or worn parts and products.
4. Learn how to operate machines and use the tools necessary to produce the product.

TEACHER NOTES:

1. Discuss the steps and procedures for the production of parts.
2. Discuss parts fabrication.

3. Discuss maintenance of: products, worn parts, and manufactured parts.

4. The teacher must provide learning experiences on how to operate machine and perform tool and manipulative tasks necessary to producing the product.

VI. Quality Control (establishing acceptable limits of variation in the attributes of a product and reporting the status of maintaining the product in respect to those limits)

A. Control methods development (establishing ways of preventing or limiting production of unacceptable parts, subassemblies, or products)

1. Analyze product quality specifications
2. Specify inspection locations
3. Specify inspection methods
4. Specify control methods

B. Gage control (maintaining the accuracy of instruemtns used in inspection activities)

1. Keep gage location and maintenance records
2. Store idle gages
3. Inspect and repair gages

C. Inspection and test (conducting quality control measurements and analyses; rejecting products, recommending the halting of substandard production processes; and notifying those affected)

1. Appraise quality of product
2. Maintain control charts
3. Reject or accept products

D. Customer complaints (investigating and reporting upon manufacturing responsibility for products alleged faulty by dissatisfied purchasers and taking steps to correct operations found substandard)

1. Investigate validity of customer complaints
2. Advise those affected of company liability to customer
3. Secure modifications of operations and products

E. Salvage (determining the most economical methods of using or disposing of rejected or obsolete items and scrap and preparing them for those users or dispositions)

1. Analyze by-products and surplus or obsolete items
2. Determine disposition of items
3. Prepare items for sale or use

INSTRUCTIONAL AIDS:

1. SVE Filmstrip #A636-6 "Quality Control"
2. Film #16 "A-D Controls - The Conscience of A Company"
3. Film #9 "Tools and Rules for Percision Measuring"
$. Examples of Plant Daily Production Report and Monthly Report Form

STUDENT ACTIVITIES:

1. Establish ways of preventing or limiting production of unacceptable parts, subassemblies or products.
2. Maintain the accuracy of those devices used in the inspection activities.
3. Establish procedures for halting production of substandard parts.
4. Maintain inspection records as to number of parts, subassemblies or products rejected or accepted.
5. Devise methods for investigating and reporting upon manufacturing responsibilities for products alleged faulty by dissatisfied purchasers.
6. Devise a method for disposing of obsolete or rejected items and scrap material.

TEACHER NOTES:

1. Discuss product quality specifications.
2. Point out importance of methods of inspection.
3. Discuss inspection tolerances.
4. Discuss inspection devices.
5. Discuss inspection and test charts.

6. Discuss customer complaints and ways of dealing with such complaints.

7. Discuss methods for the disposition of by-products and other usable items.

SUGGESTED EVALUATION ITEMS:

TRUE - FALSE

1. The engineering department is responsible for obtaining patents for new products.

2. Mass production is responsible for out high standard of livin

3. A selection of a product transportation medium would take int consideration cost, time, and safe handling.

4. Jigs and fixtures are materials holding devices which are uaually made in the plant, and not bought with a machine, but are always necessary in the production of a product.

5. Some type of quality control is a necessary part of any industry.

6. Quality control may be defined in part as the department of industry which establishes acceptable limits of variations. Instead of "acceptable limits of variations", we can use "within tolerance allowed" and mean the same thing.

MULTIPLE CHOICE

7. One of the following is not a function of the Industrial Engineering Department in industry.
   (a) produce authorized tools, jigs, fixtures and pattern
   (b) secure product design and specification changes
   (c) establish facilities required
   (d) establish relationships of facilities and utilities.

8. Plant Engineering is concerned with
   (a) plant layout
   (b) operation scheduling
   (c) methods study
   (d) plant equipment control

9. Which of the following is not a function of the manufacturin department of industry.
   (a) produce parts
   (b) combine parts
   (c) repair tools, jigs, fixtures and patterns
   (d) produce finished products

MATCHING

10. Listed below are the functions and sub functions of the production department of industry. Place the letter of the function on the left in the blank by the sub function on the right that is indicative of the function. The letters may be used more than once.

A. Plant Engineering
B. Industrial Engineering
C. Purchasing
D. Production planning and control
E. Manufacturing
F. Quality

___Gage control
___Salvage
___Buying
___Part manufacture
___Service and repair
___Salvage sales
___Material procurement
___Performance reporting
___Plant layout
___Work measurement
___Plant equipment control
___Maintenance

COMPLETION

11. Before personnel hires a new employee to work in the production department, he must be interviewed by the (production forman).

12. Mass-production in industry has brought about the ability to produce products in greater quantities, more rapidly and at a reduced cost to the consumer.

MARKETING

INTRODUCTION

By definition marketing is "directing and encouraging the flow of goods from producer to the consumer or user." It is generally thought of as just the selling of a product, but there is actually a great deal more involved than that. Facts relating to the sale and transfer of products must be gathered, recorded, and analyzed in order to determine who and where the customers are, their needs and wants, when and how they will buy, and how much they are willing to pay.

Marketing is the business activity through which human wants and needs are satisfied by the exchange of goods and services for something of value, such as money. It involves the planning necessary to offer the right merchandise at the right place, at the right time, in the right quantities, and at the right price.

Marketing consists of researching the potential market, advertising and promoting the product, planning the sales and obtaining the order, getting the product to the customer promptly, in good condition, and as it was represented to the customer by the sales force.

Marketing in general, may be divided into six areas or phases within an industry -- market research, advertising, sales promotion, sales planning, sales operations, and physical distribution.

MODEL MARKETING

Week	Instructional Topics	Instructional Aids	Student Activities
	I. MARKET RESEARCH A. Market Analysis B. Product Requirements C. Distribution Problems	COUNSELOR INTERACTION: Individual and class responsibility to resource person Resource person: sales manager from a manufacturing industry COUNSELOR INTERACTION: Occupational requirements and opportunities in marketing	Devise a form for and take a sample of customer preference by mail or by interview in the school for a specified product
	II. ADVERTISING A. Campaign Planning B. Copy Presentation C. Selection of Media D. Production of Copy	Samples of radio scripts and newspaper mats COUNSELOR INTERACTION Comparison of requirements and opportunities of personnel in marketing and with other personnel in same job families	List some of the advantages and disadvantages of advertising by: a. radio b. Newspaper c. television d. direct mailing e. handbills
	III. SALES PROMOTION A. Program Development B. Sales Aids	Catalogs from different types of business	Prepare a list of commonly used sales aids
	IV. SALES PLANNING A. Sales Policies B. Budgeting C. Pricing D. Buying E. Packaging	Packages, cans, boxes wrappers, from everyday products COUNSELOR INTERACTION A systematic review of a job or occupation	Write a report on the importance of packaging to the sale of a product
	V. SALES OPERATIONS A. Salesman Procurement B. Salesman Training C. Salesman Direction D. Salesman Compensation E. Selling the customer	Film #16: "Follow it All the Way"	Make a list of the qualifications you would want to find in an applicant looking for a job in your company

MODEL MARKETING

Week	Instructional Topics	Instructional Aids	Student Activities
	VI. PRODUCT DISTRIBUTION		
	A. Warehousing B. Shipping C. Product Service	Film #9: "Aluminum is not only Aluminum"	Make a list of currently used methods of goods transportation

SUGGESTED LESSON PLAN . . . . MARKETING

NOTE TO INSTRUCTOR:

The purpose of this lesson is to acquaint the student with the problems the manufacturer faces in determining the potential demand which will affect his choice of a product to be made, the procedures followed in planning the advertising which will induce the customer to buy the product, and the developing of the sales promotion and planning for the product.

In addition, the actual selling operation will be presented along with the methods of handling the product and transporting it to the customer.

Finally, the student will be shown the importance to a manufacturer of maintaining good relations with the product user through a reasonable and comprehensive plan of product service.

Students whose family members are involved in any of the areas of marketing and sales should be especially urged to take an active part in the classroom activities when they have some first-hand information concerning the subject being discussed.

OBJECTIVES:

To develop in the student:

1. The ability to recognize the importance to an industry of good market research, demonstrated by the successful measurement of the interest shown by the school's student body in a proposed Industrial Arts class product.

2. A knowledge of good customer-manufacturer relations brought about through evaluation of consumer products found in the student's home and the satisfaction or dissatisfaction of actual consumers or users.

3. An awareness of the tremendous size and scope of the manufacturer's sales organization as determined by an actual survey of the community's citizens actively engaged in selling and servicing products.

4. An understanding of the major importance of the marketing area of a manufacturing organization through the study of how this area indicates what is to be made, when it is to be made, how it is to be promoted, what price range it must fall in, and even where it is to be produced.

5. The knowledge of the opportunities available in the marketing areas of manufacturing through an understanding of job descriptions, selling openings, and the advancement possible in the field of marketing.

TIME ANTICIPATED: Two to three weeks.

INSTRUCTIONAL AIDS:

Chalkboard and chalk
Overhead projector
16mm film projector
Price tags
American Industry Film Slides
Packages, cans, boxes, wrappers
School counselors
Job description sheets
Radio scripts, newspaper mats
Mail-order catalogs
Slide projector
Resource persons
Questionnaires
16mm films
Overhead projecturals

INTRODUCTION:

Stated briefly, marketing is the direction and encouraging the flow of goods from producer to consumer or user. In everyday practice selling is looked on only as the act of pricing the product and then trying to persuade the prospective buyer to buy. There is a great deal more to marketing than this limited conception. It has been remarked that in any business "nothing happens until somebody sells something." And this selling something is a highly specialized procedure.

The potential market must first be researched to determine the product to be offered to the buying public, then advertising of the product must be carried out through its many phases, the sales of the product must be promoted, the sales effort must be planned, the actual selling operations must be carried out, and finally, the product must be delivered into the hands of the consumer and serviced under the terms of the warranty.

The following body of subject matter will cover all of the above and is designed to give the student an insight into all the areas of marketing a product that is to go through the manufacturing process.

SUBJECT MATTER OUTLINE:

I. MARKETING RESEARCH: (The gathering, recording and analyzing of facts relating to the transfer and sale of products)

   A. Market analysis

      1. Carried out through

         a. questionnaires
         b. public polls
         c. determining past customer preferences
         d. determining the extent of the potential market
         e. determining the characteristics of the market

B. Product Requirements

  1. Getting customer attitudes toward product

  2. Getting customer reactions to product specification and prices

  3. Finding preferences of color, form, and shape

C. Distribution Problems

  1. Recommending policies to the manufacturer

  2. Determining the location of the market in relation to the manufacturer's facilities

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COUNSELOR INTERACTION: Set #1

1. Students take part in suggesting and selecting a basic list of questions to be asked (Occupational Information)

2. Students simulate a group conference

3. Students summarize and discuss group conference findings

4. Students suggest means of improving classroom participation

Film: "Effective Listening"

Set #2

1. Students explore occupational literature

2. Students question community employers concerning jobs in marketing

3. Small groups of students prepare class report on jobs in marketing

4. Students role-play job roles

5. Students obtain information from personnel employed in marketing

6. Students prepare visual display of job activities

Film: "Prospecting"

Pamphlets: Advertising/Brand Management
Field Advertising Management
Market Research Management
Research and Development

INSTRUCTIONAL AIDS:

1. Film: "Breakthrough in Transportation"
2. Resource person -- such as sales manager from a manufacturing company
3. General Industry Transparencies: #1, 2, 3
4. American Industries Slides: #16,19

STUDENT ACTIVITIES:

1. Obtain a report of a poll dealing with some product from:
    - A. newspaper
    - B. magazine
    - C. Weekly Reader
2. Devise a form for and take a sample of customer preference by mail, by class, by school, or by community for a specified product
3. Tabulate and evaluate the information gathered through (2) above
4. Conduct a written poll to determine which color preference prevails for a chosen product

TEACHER NOTES:

1. Discuss how a market is measured and evaluated
2. Explain how distribution problems can affect selection of the product to be manufactured
3. Relate some ways by which customer preference can be ascertained

II. ADVERTISING: (The non-personal presenting and promoting of ideas, products or services paid for by a sponsor)

- A. Campaign Planning
    1. Preparing the advertising budget
        - a. predicting the volume of sales
        - b. apportioning funds for advertising
    2. Choosing an advertising agency
    3. Testing advertising program effectiveness

B. Copy Presentation

  1. Conducting consumer motivation studies

    a. by age groups
    b. by income levels
    c. by consumer needs and luxuries

  2. Selecting the most promising appeals

  3. Preparing the advertising copy

C. Selection of Advertising Medium

  1. Choosing the medium

    a. to get the most coverage for the money spent
    b. finding the medium most suited to the product and its price range
    c. considering the time element involved

  2. Analyzing the medium coverage

    a. newspapers
    b. radio
    c. direct mailing
    d. handbills
    e. television

  3. Testing medium effectiveness through sample areas

D. Production of the Advertising Copy

  1. Developing the advertising layouts

    a. from photographs
    b. using charts and graphs
    c. drawings or other art work

  2. Procuring plates, art work, and scripts

    a. writing
    b. recording

  3. Printing methods based on volume requirements

COUNSELOR INTERACTION:

1. Group discussion comparing requirements and opportunities in marketing personnel

2. Students obtain information from people in marketing other than in a company, for example: shoe salesman

3. Students compare interests, responsibility, skills, education, rewards, etc. of various marketing personnel
4. Students role-play shoe salesman and computer salesman
5. Students verbally relate jobs in marketing to their interests and needs

   Film: "How To Investigate Vocations"

INSTRUCTIONAL AIDS:

1. Samples of radio scripts, newspaper mats, broadcasting tapes and records

STUDENT ACTIVITIES:

1. Select and prepare an item of advertising copy for the sale of some product.
2. Determine the different rates of the mediums for the prepared copy.
3. List some of the advantages and disadvantages of advertising by:
   a. radio
   b. television
   c. newspaper
   d. direct mail
   e. handbills
4. Design and produce a two-color sign by the silk-screen process
5. Take a photograph of some product, process the film and the print, and write copy listing the product's good features

TEACHER NOTES:

1. Show how planning and scheduling of advertising is carried through
2. Draw a comparison between the costs of radio, newspaper, television, and direct mailing advertising

III. SALES PROMOTION (Supplementing and coordinating personal selling and advertisiing for greater effectiveness)

   A. Program Development

      1. Selecting programs

         a. beyond initial advertising
         b. concentration on programs which produce most results

2. Preparing and directing programs

    a. personnel for programs
    b. directing and coordinating
    c. capitalizing on sales trends

B. Sales Aids

1. Selecting sales aids

    a. select those most suited to product and market
    b. consider most factor of sales

2. Preparing and distributing sales aids

    a. kits
    b. displays
    c. mobiles
    d. sample accounts

INSTRUCTIONAL AIDS:

1. Catalogs from several types of business concerns

STUDENT ACTIVITIES:

1. Prepare a listing of commonly used sales aids

2. Design, sketch, and build a display to be used as a sales aid for marketing a bicycle

TEACHER NOTES:

1. Show the importance of catalogs to many kinds of businesses

IV. SALES PLANNING: (Planning for marketing the right product at the right time, in the right place, in the right quantities, at the right price)

A. Sales Policies

1. Formulating selling plans

    a. timing of product introduction
    b. seasonal demands

B. Budgeting

1. Forecasting sales (from market analysis)

2. Selling sales quotas

    a. profit on salesman's time
    b. coverage of market territory

3. Estimating sales costs

    a. volume of production
    b. salesman's compensation

C. Pricing

1. Establishing price-profit policies

    a. how much to get
    b. competition in the market

2. Pricing products and preparing price lists

    a. lists to dealers and consumers
    b. discounting prices

D. Buying

1. Selecting goods for purchase

    a. what materials are cheapest and best
    b. possible material changes due to product modification during manufacturing process

2. Determining purchasing quantities

    a. advantages of quantity buying
    b. storage factors
    c. price fluctuations

3. Selecting sources of supply

    a. reliability of supplier
    b. transportation considerations
    c. prices to be paid

4. Terms and delivery dates

    a. lowest price not always best
    b. cash or time payment
    c. delivery scheduling

5. Placing firm orders

E. Packaging

1. Determining the functional requirements

    a. weight of product
    b. size of product
    c. form of product
    d. durable or perishable product

2. Determining requirements to aid sales
    - a. eye appeal
    - b. ease of customer handling

3. Developing package specifications

INSTRUCTIONAL AIDS:

1. Packages, cans, boxes, wrappers, tubes, from common products

2. Marked down price lists and tags from special sales

3. Film: "Banking In Action"

4. Film: "American Look"

5. Film: "Steady Work Steady Pay"

6. American Industries Slides: #40

STUDENT ACTIVITIES:

1. Write a 200 word report on how a final selling price for a product is arrived at by a manufacturer or a dealer.

2. Write a 100 word report on the importance of packaging to the sale of a product.

3. Determine the requirements for a package for a specified product to be shipped to a specified destination.

4. Design, sketch, and write specifications for a package to be used for shipping a table model radio.

V. SALES OPERATIONS: (Transferring products to customers in exchange for money)

A. Salesmen Procurement

1. Analyzing job requirements
    - a. educational level required
    - b. type of market sought

2. Analyzing sources of potential customers
    - a. from trade sources
    - b. from educational institutions

3. Attracting potential employees
    - a. by word of mouth
    - b. through want-ads
    - c. through trade journals

4. Testing applicants
    a. personal interviews
    b. previous work records
    c. aptitude tests
5. Investigating references
    a. former employers
    b. credit bureaus
    c. personal sources

B. Salesmen Training

1. Sales tools and training classes
    a. familiarization with product
    b. customer relations
    c. type of market
    d. customer prejudices
2. Field training

a. introduction to territory
b. working with experienced personnel

C. Salesman Direction

1. Assigning to territories and routes
    a. geographical factors
    b. potential volume of territory
    c. sales personnel seniority
2. Setting performance standards
    a. costs of selling
    b. expense accounts
3. Supervision of salesmen
    a. structure of sales department
    b. sales reports

D. Salesman Compensation

1. Selecting plans or bases
    a. salary
    b. salary and commission
    c. commission
    d. bonuses

E. Order Service

1. Answering inquiries
   a. telephone
   b. mail

2. Quoting prices
   a. inquiry level
   b. discount levels

3. Processing orders
   a. shipping goods
   b. inventory control
   c. salesman credit
   d. back-ordering and cancellations

F. Selling

1. Selecting potential customers
   a. those in the product field
   b. financial reliability

2. Convincing prospective customers
   a. demonstrating product
   b. showing how customer can benefit
   c. giving customer edge over competitors

3. Securing orders
   a. presentation
   b. closing sales
   c. handling customer complaints
   d. following up sales

COUNSELOR INTERACTION

1. Students prepare a checklist of facts about a job (Occupationa Information)

2. Students apply checklist to jobs previously studied

3. Students write own preferences to checklist items

4. Students compare own interests to that of job study

5. Students ask parents or friends to complete checklist in reference to their job

6. Industrial Arts teacher and counselor complete checklist in classroom in reference to their job

   Film: "Choosing Your Occupation"

INSTRUCTIONAL AIDS:

1. Resource person -- such as salesman from auto agency
2. Film: "Follow It All The Way"
3. General Industry Transparencies: #19, #20
4. Film: "Onward and Upward"
5. American Industries Slides: #39, #40, #41

STUDENT ACTIVITIES:

1. List three ways in which salesmen are paid
2. Make a list of the qualifications you would want to find in an applicant for a job in your manufacturing company

TEACHER NOTES:

1. List some good features and some drawbacks to a career in selling
2. Show openings in the fields of sales appearing in want-ad pages of local newspapers

VI. PHYSICAL DISTRIBUTION: (Moving and handling products from the point of storage to the point of consumption or use)

- A. Warehousing
  - 1. Determining storage location and capacities
    - a. strategic location in reference to market
    - b. determining necessary stock level
    - c. time necessary for delivery
  - 2. Performing storekeeping activities
    - a. damaged merchandise
    - b. shifting stock for convenience or freshness
    - c. keeping inventory of stock on hand
- B. Shipping
  - 1. Assembling orders
    - a. shipping personnel

        - b. preparing product for carrier

    2. Selecting transportation medium

        - a. best way costwise
        - b. best way timewise
        - c. best way for safe handling of product

    3. Delivering products

        - a. customer pickup
        - b. FOB shipments
        - c. company transportation routing
        - d. common carriers

C. Product service

    1. Handling returned products

        - a. crediting customer
        - b. repairing or replacing
        - c. lost or stolen goods
        - d. soothing irritated customers

    2. Developing and administering warranties

        - a. probability of product going bad
        - b. warranty an edge over competition
        - c. relative cost of repairing or replacing
        - d. value set on customer satisfaction

    3. Providing technical service to customers

        - a. manufacturers associations
        - b. technical aspects of use of product

INSTRUCTIONAL AIDS:

1. Film: "Breakthrough In Transportation"

2. Flowchart of route of goods from manufacturer to consumer

3. Film: "Aluminum Is Not Only Aluminum"

4. Film: "Trucks and Your Town"

5. American Industries Slides: #31, #32, #33, #34, #35, #36, #37

STUDENT ACTIVITIES:

1. List examples of currently used methods of transportation

2. Design, sketch, and build a 36" x 48" display board showing the progress to date in transportation mediums

TEACHER NOTES:

1. Discuss the use of the warehouse in marketing and the relationship between warehousing and shipping for prompt customer service

2. Point out the importance of good product service policies

SUMMARY:

This lesson plan should have given the student a clearer understanding of the part played by the Marketing division of any manufactorying industry. Emphasis and concentration of effort should be placed on the principal divisions of the marketing effort which are beiefly gone over again as follows:

I. MARKETING RESEARCH through which facts relating to the sale and transfer of the product are gathered, recorded, and evaluated.

II. ADVERTISING: the product, the non-personal presenting and promoting ideas and methods which will induce the prospect to buy the product.

III. SALES PROMOTION: which supplements and coordinates the personal selling effort and increases its effect.

IV. SALES PLANNING: which endeavors to market the right product at the right time, in the right place, in the right quantities, and at the right price for both the user and the manufacturer.

V. SALES OPERATIONS: which is the actual selling effort made to put the product in the hands of the customer in exchange for money.

VI. PHYSICAL DISTRIBUTION: which handles and moves the product from the point of manufacture and/or storage to the point of consumption or use.

The student should realize through this lesson on MARKETING that the entire effort of manufacturing is directed at and is dependent on getting the product into the hands of the customer in exchange for his money.

SUMMARY QUESTIONS:

1. Why is the marketing organization a most important part of any manufacturing effort?

2. How can market research be used to find out if a certain product has a good chance of selling.

3. In what ways do the package containing the product aid in selling the product?

4. Can public opinion polls such as Gallup's be effectively used in market research?

5. Explain what is meant by "customer preference"?

6. Why is the careful selection of an advertising medium so important to the selling effort?

7. Are there times when radio advertising would be better than television advertising? If so, why?

8. Why is the catalog of products so important in selling one type of product and not another kind?

ASSIGNMENT:

1. Prepare a list of ten different products which are not manufactured locally but are warehoused in your home city for local distribtuion.

2. Locate and bring to class three articles appearing in magazines or newspapers which deal with Marketing.

3. Prepare a list of the common carriers in your area which transport goods or products for local sale.

4. Bring to class one item of advertising which has come to your home through the United States mail.

5. Compile a list of topics which tell about Marketing from publications found in the school library or your home.

6. On a piece of material such as corrugated board or hardboard, 24" x 30" in size, mount as many different types of containers for products as you can find, such as boxes, bottles, bags, tubes, and the like.

EVALUATION:

The following are some representative items which can be used for evaluating the efforts of the teacher in the area of marketing:

A. Objective Testing:

   1. Matching:

      In the left-hand column are listed five major divisions of Marketing. In the right-hand column are some phases of those divisions. Match the Phase in the right-hand column with the proper division, writing the letter representing the phase in the blank space provided.

Market Research	B
Advertising	D
Sales Promotion	E
Sales Operations	C
Product Distribution	A

A. Company transportation routing
B. Questionnaires
C. Securing orders
D. Direct mailing
E. Display materials
F. Drilling and reaming

2. Completion:

   a. The gathering, recording, and analyzing of facts relating to the transfer and sale of products is called market research.

   b. Insuring that all positions in a manufacturing industry are filled by competent persons is the responsibility of the personnel department.

   c. The money paid to a stockholder as a result of the company's profit on operations is called a dividend.

3. a. T F Any selection of a product transportation medium should take into consideration cost, time to deliver, and safe handling.

   b. T F A product warranty should give a manufacturer a selling edge over a competitor who issues no such warranty.

B. Performance Testing:

1. Given the necessary information, write, revise, time, and otherwise get a one-minute radio advertising script ready for reading at the local radio station.

2. An alarm clock manufactured in your home town must be shipped overseas by air transport. Design and build a shipping carton which will weigh no more than eight ounces, measure no more than six inches on any side, and will keep the clock free from damage when dropped from a height of ten feet on a concrete floor.

C. Subjective Testing:

1. In not over 500 words, explain the function of the product service personnel employed by a washing machine manufacturer.

2. In one page or less describe the relation of an advertising agency to a lawnmower manufacturer.

FINANCE AND CONTROL

INTRODUCTION

If a new enterprise is to be solidly launched, attention must be paid to the problem of financing. The capital structure of the new enterprise must be planned. The current need for working capital must be evaluated, and methods must be worked out to assure its availability. The industrial promoter or business administrator must be familiar with the sources of capital and the methods of raising it.

There are different kinds of capital. Usually the common meaning of the word capital is the single term used to cover the land, buildings, machinery, tools, and materials of a productive enterprise. Although land is technically capital, it is distinguished from the other means of production because they can be reproduced and land cannot. However, businessmen seldom make this distinction. He thinks of capital in money terms.

Financial administration requires two things. One is an organized system of accounting that gives the financial administrator a record of past operating results and the current financial condition. There must be an accurate understanding and interpretation of these financial records to appraise the current situation at any time. The other tool is budgeting -- a matter of financial planning for a period of time.

Finance can best be described by dividing it into six basic departments. The Financial Planning Department deals with obtaining and investing funds in a way that will be most beneficial to the company. The Tax Management Department plans and manages the company's tax liabilities. The Financial Relations people make sure that relationships with existing and potential companies stay on good terms when dealing with monetary matters. The Custody of Funds Department controls the actual handling of receipts and money to be paid out. The Credit and Collections Department investigates credit and collects overdue payments. The final section of finance is the Insurance Department which secures and maintains adequate financial protection against the hazards to which a company is exposed.

The Control Department maintains records on company operations and provides accounting services for use by the managers in planning and controlling the business. The job of Control is the keeping of a file of records and preparing reports for the stockholders to meet the legal and tax requirements of the company. The records are kept on all company operations for the use of the managers in case the records are needed again for a similar production job.

MODEL FINANCE AND CONTROL

Week	Instructional Topics	Instructional Aids	Student Activities
	I. FINANCE A. Finance Planning B. Tax Management C. Financial Relation D. Custody of Funds E. Credit and Collection F. Insurance II. CONTROL A. General Accounting B. Cost Accounting C. Planning and Budgeting D. Internal Auditing E. System and Procedures	Films: 1. American Business System: Financial Management 2. The Shareowner **Samples of: a. Business forms local bank b. Stocks and bonds Resource person: 1. An accountant from a local industry. **Representative from local bank.	Determine how much capital is required to obtain the materials needed for the company's operation. Select a method of financing the production of all products. Organize a bookkeeping system that would include money taken in, paid out in salaries, rent, utilities, and necessary materials. Set up a pay scale for the employees of the company and see that they are paid. Make charts and graphs to show financial status of the company. Calculate the manufacturer's price of the product produced.

SUGGESTED LESSON PLAN (1). . . . . FINANCE AND CONTROL

Note To Instructor:

This lesson is planned to help the student become familiar with the various financial aspects of industry. It is not meant to be all inclusive, but to relate the basic knowledge of the major role in financing an enterprise. Illustrate that finance in industry consists of planning, directing, and measuring use of company money.

General Objectives:

To develop in the student:

The ability to identify several ways of producing capital for industry.

A basic understanding of the importance of financial affairs in industry.

The ability to analyze and apply methods of financing.

Behavioral Objectives:

1. Without the aid of references, the student will list and briefly describe three basic methods utilized in industry to obtain operating funds.

2. Given a list of items (including size, name of parts, etc.) for producing a product and a blank bill of materials form, the student will fill in the necessary information on the form correctly with a minimum of one error.

3. With the aid of four different price lists for materials, the student will compare the lists and select the one most beneficial to the company.

4. Given a standard tax rate schedule and the gross intake figures for the company, the student will calculate the amount of money to be paid by the company in taxes.

5. From a list of 15 items, the student will identify and circle only those items that might be given on a report of the financial status of the company with a minimum of two errors.

6. Given a blank receipt, the student will write a receipt of a specified amount to John Doe for a payment on a bill, exclusive of errors.

7. Given a standard two column bookkeeping form, the student will write the definition of each of the circled terms.

8. Given a group of five credit reference forms on prospective creditors, the student will compare and select only one that would be most desired by the company.

9. From a group of three insurance policies, the student will select the one most adequate for a company of given assets.

10. The student will identify by name at least 5 of the seven monetary receipts used in class.

11. Given five of the monetary receipts used in class, the student will fill out four of the five forms correctly.

12. The student will identify by name the bookkeeping form used by the class to record the money taken in and paid out in salaries, rent, utilities and other necessary materials.

13. Given a set of job cards (including one incorrectly filled out), the student will select the one with errors and make all the necessary corrections.

14. Given a list of five employees, including their hourly wage and hours worked, the student will compute the total wages for each employee with a minimum of one error.

15. Given a bill of materials (exclusive of cost) and a price list of the materials for a product, the student will calculate the total cost of the materials to within 1% of the actual cost.

16. Given the expenses for raw materials, direct costs and indirect costs for producing a product, the student will calculate the profit from the product within five cents of the correct amount.

17. From a list of expenses for raw materials, direct costs and indirect costs for producing a product, the student will calculate the manufacturer's price for the product within five cents of the correct amount.

18. Given a list of five manufacturing expenses for producing a product, the student will circle those expenses directly related to direct cost and underline those related to indirect cost with a minimum of one incorrect item.

19. With the aid of a chart indicating the financial status of the company, the student will demonstrate his understanding of the information by orally explaining the information on the chart.

20. With the aid of a flow chart for a production operation, the learner will identify the sequential order the material will flow.

COUNSELOR INTERACTION

21. The student will exhibit the ability to express occupational goals in terms of financial status by reacting to a hypothetical situation involving occupational goals and financial status of a person seeking to obtain these goals.

22. The student will exhibit the ability to differentiate between different kinds of investments and savings by preparing and presenting a program emphasizing investments and savings to his class and/or to another I.A. class.

23. The student will exhibit the ability to recognize the importance of investment in terms of both the psychological and tangible aspects and his decision-making ability will be enhanced by his going through the procedure of purchasing stock in the company formed in the class and evaluating the wisdom of his selection by determining his net profit or loss at the end of the course.

INTRODUCTION:

Like all other things that bear the label finance or financial, corporation finance has to do with money. As a field of study, it embraces all the theories, procedures, institutions, instruments, problems and policies that are involved in the acquisition and use of money by business corporations. For small manufacturing firms financial needs are relatively small and may be met initially through the personal savings of the promoter, the investments of funds by his friends, or a small inheritance. As financial needs increase, the corporate system is relied upon to a greater extent on stocks being sold to the public and investment institutions.

SUBJECT MATTER OUTLINE:

I. FINANCE IN INDUSTRY (Securing adequate operating funds at minimum cost; investing surplus funds to best advantage; and maintaining a good pecuniary reputation for the company. May be described as six basic departments).

   A. Financial Planning (Predicting the need for obtaining or investing funds).

      1. Predicts needs for capital

         a. materials

         b. miscellaneous

      2. Develop optimum methods of obtaining funds

a. sale of stocks and bonds (stock represents ownership in a corporation, while a bond is like an IOU. It represents money lent to a corporation or a government).

b. stocks

i. common (dividends may be increased when business is good or little or no dividends if business is bad - gives voting rights).

ii. preferred (paid dividends at a specified rate regardless of company's growth - some have voting rights).

3. Profits (received from previous products)

4. Credit (the power to get goods or services by giving the promise to pay money (or goods) on demand or at a certain time in the future).

a. consumer (short term - small amounts - seldom over three years).

i. installments (payments regular intervals - fixed amount).
ii. collateral plans (made in respect to amount of collateral the borrower has control of).
iii. charge accounts (many different time plans available - convenient and low cost).
iv. mortgage (long term credit but has a disadvantage of high interest rate).

b. corporate (long term - loans vary into the millions).

i. commercial credit (used to finance production cost - short term credit - 60 days to 6 months).

ii. investment (for purchase of capital goods - long term credit, usually several years).

5. Forecast money-market conditions

a. questionnaire
b. samples of product
c. personal contact

6. Plan working capital requirements

B. Tax Management (Planning and managing the company's tax liabilities).

1. Evaluate tax liability

2. Minimize the cost of taxes

3. Deal with taxing bodies

C. Financial Relations (Maintaining relationships with existing and potential companies, their creditors and investors, on all monetary matters, including obtaining of all accounting for funds)

1. Maintain goodwill of financiers and investors

2. Report to financially interested parties

3. Negotiate financing agreements

4. Manage investments

5. Administer pension and similar funds

D. Custody of Funds (Controlling the physical handling of receipt and disbursements)

1. Receive and disburse funds

2. Protect funds

E. Credit and Collections (Controlling exposure to bad debts and losses and collecting overdue payments).

1. Establish credit policies

2. Investigate credit references

3. Collect overdue funds

F. Insurance (Securing and maintaining adequate financial protection against the hazards to which the company is exposed).

1. Appraise and evaluate insurance policies

2. Plan and negotiate coverage

Instructional Aids:

1. Films:

   A. American Business System: Financial Management
   B. The Shareholder

2. Portfolio of Teaching Aids

3. Two-column bookkeeping record book

4. Materials price list (for materials being used)

5. Receipt book

6. Samples of:
   A. Credit applications
   B. Credit cards
   C. Sales receipts from purchases on credit
   D. Business Forms from local bank (statements, checks, etc.)

7. Resource Persons:
   A. Business teacher and/or math teacher
   B. Representative from the local bank and/or an insurance salesman

8. Film slides (American Industries Series #42-43-44-45

Suggested Student Activities:

Student may in:

A. Financial Planning

   1. Determine how much capital is required in acquiring the materials needed for a particular company's operation.

   2. Compute the amount of money to be paid out in wages in the compnay (wages paid in relation to importance of the job).

   3. Obtain the cost of the materials to be used in the manufacture of their product.

   4. Formulate a bill of materials to be used in purchasing, then pass to other departments for evaluation and approval and voted on by the Board of Directors.

   5. Select method of financing the production of all products.

   6. Either go to the bank or have a representative of the bank to speak to the class on how to obtain loans.

   7. Distribute questionnaires to determine the market probability for a proposed product.

   8. Sell and buy stock in the company.

B. Tax Management

   1. Obtain the price of all their tools, fixtures, and machines, and then calculate the percentage of all their holdings to find out what amount would be taxible.

   2. Develop a scale to determine how much money would go for taxes and how much would be grossed by the company.

3. Have a representative from finance department in a local industry to come in and speak to the class on tax management.

C. Financial Relation

1. Give a report on the financial status of the company at each organized meeting. This might include: total capital on hand, money paid out for wages and materials, profits and expected capital gain for a specified time.

D. Custody of Funds

1. Organize a bookkeeping system that would include money taken in, money paid out in salaries, rent, utilities and necessary materials.

2. Write receipts for all monetary transaction.

E. Credit and Collecting

1. Establish a standard credit policy for their company (COD, full payment within thirty days - etc.)

F. Insurance

1. Take inventory of the laboratory to determine how much capital is tied up in materials, machines, tools, and basic facilities.

2. Contact an insurance salesman and negotiate an insurance policy for their company.

3. Review and evaluate several insurance policies and decide which would be best for the company.

II. CONTROL (Maintaining records and preparing reports to (1) meet corporate legal and tax requirements and (2) measure the results of the company operations; and providing accounting services structured for use by managers in planning and controlling the business).

A. General Accounting

1. Maintain tax and related records

2. Maintain accounts receivable and issue bills

3. Maintain accounts payable and initiate payments

4. Prepare periodic accounting reports and statements

B. Cost Accounting

1. Record incurred costs
2. Maintain supporting records for, compute, and initiate payment of employee earnings and deductions.
3. Develop cost standards
4. Estimate cost

C. Planning and budgeting

1. Project profit results of alternative courses of action.
2. Develop planned costs for operations and for products and services
3. State authorized plans in budgetary and planned cost formats
4. Measure actual results against plans and standards and analyze variances

D. Internal Auditing (Assuring the accuracy of accounting records and adherence to standard practices)

1. Audit financial records
2. Establish clerical work flow
3. Establish clerical work methods
4. Measure clerical work

E. System and Procedures

1. Control creation and use of forms and reports
2. Establish clerical work flow
3. Establish clerical work methods
4. Measure clerical work

Counselor Interaction:

1. Secure various forms to demonstrate the services offered at a bank. (The I.A. teacher or math; teacher can serve as the resource person.)
2. Have the students explore and determine the approximate cost of reaching their occupational goals. (Utilize: Occupational Outlook Handbook, Chronicle Career Kit, A Summary of Colleges and Universities, Chronicle and/or college catalogs.)

3. Have the students make a budget for financing their occupational goals. (Bring in math teacher to explain budgets and budgeting.) Utilize any of the following:

Films: "Personal Financial Planning"
j-s 11 minutes 799

Emphasizes the need for prudent financial habits even in times of economic prosperity. Helps students see the relationship between financial planning and their own attainment of long-range as well as immediate goals.

"Your Earning Power"
j-s 9 minutes 1370

Presents five conditions which influence earning power: economic conditions, the kind of job selected, the amount of one's education, personal qualities, and one's ability to produce. Suggests preparation for work while still in school, with these points in mind.

Source: Catalog of Classroom Teaching Films
State Department of Education
Atlanta, Georgia

Cost: Free to all Georgia Schools

Book: Planning My Future, Grades 7-9 5-1127 (paperback)

This text contains self-administered tests and inventories that help guide the student in making preliminary as well as vocational decisions.

Source: Science Research Associates, Inc.
259 East Erie Street
Chicago, Illinois 60611

Cost: List -- $1.20; Net -- $0.90

Pamphlets: Finance and Accounting Management

Source: The Proctor and Gamble Company
Public Relations Department
P. O. Box 599
Cincinnati, Ohio 45201

Cost: Free if ordered on school letterhead stationary

They Play For Money

Source: U. S. Department of Labor
Bureau of Labor Statistics
Suite 540, 1371 Peachtree St., N. E.
Atlanta, Georgia 30309

Cost: Free in single copies

Planned Training Pays Dividends

Source: Bureau of Apprenticeship and Training
1371 Peachtree St., N. E.
Atlanta, Georgia 30309

Cost: Free in single copies

4. Counselor should prepare a hypothetical situation involving occupational goals and financial status of a person seeking to attain these goals. Ask students to react individually or collectively.

5. Have students prepare and present a program emphasizing investments and savings to his class and/or to another I.A. class.

6. Explore sources of financial aid. Show film, "How to Get Where You Want To Go."

Source: Jam Handy Organization
Film Distribution Department
2821 East Grand Boulevard
Detroit, Michigan 48211

Cost: Available on loan basis

Instructional Aids:

1. Resource Persons:
    a. Business teacher and/or math teacher
    b. An accountant from a local industry
    c. Guidance Counselor
2. Posters (for graphs showing financial status of company)
3. Samples of:
    a. Job cards
    b. Flow charts

Suggested Student Activities:

Students may in:

A. General Accounting

1. Keep a filing system on the flow of the money in the company that they established in class.
2. Give periodic statements to the board on the financial standing of their company.
3. Make up a bill that could be given to persons owing the company money.
4. Visit a local industry to observe how the General Accounting department operates.
5. Set up a two column bookkeeping system (may solicit help from business teacher).

B. Cost Accounting

1. Determine the cost of all the materials that they are going to use in the production of their product.
2. Estimate the cost of materials and then check the actual cost against their estimated cost to see how the figures compare.
3. Set up a pay scale for the employees of their company and see that they are paid (may be points for so many hours worked).
4. Prepare regular financial statements on: sales and cost of sales - product profit and loss statements.
5. Make a job card for each worker.
6. Check job card for errors or insufficient information.

C. Planning and Budgeting

1. Compare the cost of their product with the profit to see if the product was worthy of being produced.
2. Set up a budget for the product they plan to produce.
3. Determine the costs for materials, direct cost (labor) and the indirect expense (overhead).
4. Calculate the manufacturer's price for their product.
5. Determine the percentage of total costs to be used for profit.

D. Internal Auditing

  1. Make charts and graphs to show the financial status of the company.

E. System and Procedures

  1. Set up a flow chart for the mass production operations of their product.

  2. Arrange machines in the lab to facilitate the flow of parts when mass producing a product.

Suggested Questions:

1. Why is it important for a company to keep an accurate financial record of its business?

2. List and explain three methods by which a new company might acquire funds for its operations.

3. We usually refer to capital in terms of money, but it also applies to other things. Name five other items that are considered to be capital.

4. Why would a large company utilize a double entry or a more complicated bookkeeping system preferably to a single entry system?

5. What items are included in the indirect cost of producing a product? Direct cost?

6. How does a person become a shareowner in a corporation?

7. What is the basic difference between stocks and bonds?

8. What are the three major items needed to calculate the manufacturer's price of a product?

9. What items are included in a bill of materials?

10. What are the three major items you should consider when selecting prospective creditors?

PERSONNEL ADMINISTRATION

INTRODUCTION

> "Developing and administering policies and programs for providing an effective organization structure, qualified employees, equitable treatment, advancement opportunities, job satisfaction, and adequate job security."

Personnel administration may be broadly defined as that activity area of industry which is concerned with maintaining the manpower of an enterprise or organization. This area involves quality of employees, their fitness for work, their development, their attitudes of cooperation and loyalty, and control of labor turnover. At the same time, the cost of manpower must be held within limits dictated by the economic necessities of the enterprise. Obviously, wages and salaries are vital factors in employee relations.

This area of an industry serves a vital role. It insures that all positions are filled by competent people at reasonable cost. This department sees the new employees receive the training and information required to perform their duties effectively. The personnel section determines dollar value of positions, insures that they are fair and equitable in relation to other positions, and makes sure that employees are fairly compensated for their labor.

The functions or responsibilities of personnel administration could be grouped into five major classes---employment, wage and salary administration, industrial relations, organization planning and development, and employee services. These different divisions could be considered a service agent of an industrial enterprise because their primary objective is to provide aid and assistance to the other areas of the organization.

MODEL PERSONNEL ADMINISTRATION

Week	Instructional Topics	Instructional Aids	Student Activities
	I. Employment A. Recruitment B. Selection C. Indoctrination D. Promotion and Transfer D. Separation	Film: The Bright Young Newcomer Booklet: Choosing your occupation Application forms from local industry Overhead transarencies Texts on Machine and Tool operation	Fill out self inventory form. Participate in job interviews. Give company test. Re-test current employers for promotion. Develop new test. Give performance test. LEARN HOW TO SAFELY AND PROPERLY MANIPULATE TOOLS AND MACHINES NECESSARY TO MAKE A PRODUCT.
		COUNSELOR INTERACTION: Invite personnel manager from industry to talk with the class. Role Play: Do A Job Survey	Students will prepare job descriptions. Assign title to each position. Develop rate scales
	II. Wage & Salary Administration A. Employee Classification B. Rate Determination C. Merit Ratings D. Supplement Compensation E. Work Schedule Control	Job Description sheet from local industry Time study sheet	Develop merit rating program Conduct merit rating reviews
		COUNSELOR INTERACTION: Complete and mail Social Security applications	Measure merit rating result Plan profit sharing program Student will visit companies with profit sharing programs. Make up a schedule for vacation.

MODEL PERSONNEL ADMINISTRATION

Week	Instructional Topics	Instructional Aids	Student Activities
	III. Industrial Relations A. Communications B. Collective Bargaining C. Employees Discipline D. Resonnel Research	Film: Labor Movement Beginnings and Growth in America Film: Onward and Upward Industry on Parade Guest Speaker from AFL-CIO COUNSELOR INTERACTION:	Develop Sick Leave Plan Make a suggestion box Conduct opinion survey Develop grievance procedures Stage wildcat strike Develop on-the-job training to attract potential employees
	IV. Organization Planning and Development A. Organization Planning B. Manpower Development C. Training	Guest speaker from local industry. Machine demonstration Machine maintenance Invite Director of Training Area Vocational School A visit to industry Catalog information on sources of training	Analyze key position requirements Study organization structure Recommend and make organization changes Do a study of manpower requirement Forecast manpower resources
	V. Employee Services A. Medical Services B. Recreation C. Personal Services D. Safety E. Protection and Security	Film: Don't Drop Your Guard School Nurse Lunch Room Manager Local Doctor Head of P.E. Department Film: Safety In The Shop	Do time study Do motion study Do line organization Chart

MODEL_____ PERSONNEL ADMINISTRATION

Week	Instructional Topics	Instructional Aids	Student Activities
		COUNSELOR INTERACTION: Have the school nurse talk with the class.	Provide first aid treatment Open and operate a Credit Union Operate the school and bookstore Provide for and direct employee use of recreation facilities Discuss safety with workers Investigate accidents Develop hospital insurance plan Provide free health classes Conduct safety inspection

SUGGESTED LESSON PLAN (1).......EMPLOYEE SERVICES

NOTE TO INSTRUCTOR:

Employee Services section is concerned with the welfare of each individual employee. The making of a happy and satisfied work force is another objective of this section. There are two reasons for these goals--one is the worker's effort is greatly increased when the morale is high, and the other reason is to make employment more attractive to prospective applicants.

Employee Services could be grouped under five headings: (1) Medical services which consist of providing medical treatment for employees and their families and other things such as insurance. (2) Recreation which is the providing of programs and facilities for the enjoyment of the employees. (3) Personal service or the providing of help, such as counselors or financial aid, to assist employees in their daily lives. (4) Safety which consist of the establishment and maintenance of a safety program. (5) Protection and security which involves precautionary measures against theft, fire, and other hazards. The providing of guards or watchmen, security people, and the like would be under this heading.

These services are often referred to as fringe benefits because they usually are offered free of charge to the employees. The importance of this division is rather obvious because a satisfied worker will exert his full potential for the betterment of the company.

GENERAL OBJECTIVES:

1. To develop in each student the knowledge of personal service offered by the industry to its employees.

   A. To provide understanding of the medical services.

   B. To involve the student in the recreational aspects of the industry.

   C. To provide knowledge of the personal services such as housing, transportation, credit union, etc.

   D. To develop good safety habits and precautions as it is related to industry.

   E. To develop the knowledge of industry's part in protection and security of its employees.

TIME ANTICIPATED: Two weeks

INTRODUCTION:

Employee Services: Maintaining the general welfare of employees on the job and assisting them with problems related to their security and personal well-being.

The functions of a complete type of services staff may be summarized as follows: Medical Services; Recreation; Personal Services; Safety; and Protection and Security.

SUBJECT MATTER OUTLINE:

I. Introduce the subject with a definition of Employee Services.

II. Medical Service: Preventing diseases and physical, ailments, and injuries incurred by employees on the job.

   A. Develop and administer prevention programs.
   B. Examine employees and job applicants.
   C. Provide medical treatment.
   D. Educate in health matters.

COUNSELOR INTERACTION:

1. Have the school nurse talk with the students on health practices.

2. Have a personnel manager discuss his medical plan.

INSTRUCTIONAL AIDS:

1. Medical service plan from two large companies.

2. Overhead projector and transparencies

3. Food services

STUDENT ACTIVITIES:

1. Free glasses to employees

2. Develop hospital incurance plan

3. Provide free health classes

4. Company store

   Recreation: Make company employment more attractive and satisfying by providing recreational programs and facilities for employees.

A. Conduct athletic activities
B. Conduct social activities
C. Provide and direct employee use of recreational facilities.

COUNSELOR INTERACTION:

Involve adult community participation (They may sponsor some events).

INSTRUCTIONAL AIDS:

1. All kinds of indoor and outdoor games.
2. Record player and records
3. School nurse

STUDENT ACTIVITIES:

1. Company baseball team
2. Christmas party for employees and family
3. Supervise games
4. Direct games

Personal Services: Provide services that assist employees in their daily living. Contribute to their job satisfaction.

A. Provide insurance counsel or protection
B. Provide legal counsel
C. Assist with housing and transportation problems
D. Operate credit union
E. Provide cafeteria and vending machines

COUNSELOR INTERACTION:

Maintain an attendance and performance record.

1. Housing, Group insurance hospitalization

2. Banking and financial assistance

INSTRUCTIONAL AIDS:

Bulletins of employee service published by company. Illustrate with examples services offered to employees by a company.

STUDENT ACTIVITIES:

1. Personnel Department will formulate a brief "brochure"

STUDENT ACTIVITIES: continued

2. Open and operate credit union

Safety: Develop and maintain adequate facilities and procedures for preventing on-the-job accidents.

A. Establish safety rules
B. Conduct safety inspection
C. Prevent or eliminate hazards
D. Educate safe practices
E. Investigate accidents

COUNSELOR INTERACTION:

Graph periodic accident rates.

INSTRUCTIONAL AIDS:

Booklets: Safety and Prevention of Accidents
National Safety Council
425 N. Michigan Avenue
Chicago, Illinois 60611

Film: "Don't Drop Your Guard"

Overhead transparency T-22

STUDENT ACTIVITIES:

1. Conduct safety inspection

2. Investigate accidents

3. Prevent or eliminate hazards

4. Students make safety slogan

Protection and Security: Take adequate precautionary measures to safeguard the company, its employees, and property from theft, fire, espionage, and similar hazards.

A. Provide guard or watchman service
B. Organize fire fighting service
C. Develop and administer security regulations

COUNSELOR INTERACTION:

Exhibit an awareness of positive and destructive security practices.

Resource person: Safety Engineer from Industrial Insurance Company.

INSTRUCTIONAL AIDS:

Booklets: First Aid Fire Appliances
National Board of Fire Underwriters
85 John Street, New York 38, N.Y.

STUDENT ACTIVITIES:

1. Role playing as security guard
2. Fire Chief
3. Students can check with local law enforcement officers for police protection and local fire department for equipment and information on fire protection.

SUMMARY:

Some of the services which we have listed are at least partly self-supporting, i.e., food service, housing, company stores and insurance. All of them, however, represent some cost to management in the usual practice. This cost is equivalent to tangible compensation to employees in addition to their regular pay--a form of compensation known as fringe benefits. The cost must be justified by indirect returns to the enterprise in the form of interest, loyalty, cooperation, and low labor turnover.

SUMMARY QUESTIONS:

1. What is employees services or welfare in the personnel program?
2. Describe health service as personnel division function.
3. Give three advantages of employees services, and their limitations.
4. Why should health services be extended to workers families?

SUGGESTED LESSON PLAN (2).....WAGE AND SALARY ADMINISTRATION

NOTE TO INSTRUCTOR:

The prime task of the wage and salary section of the Personnel Department is to insure that each employee receives a fair wage for the work he does. In order to perform this function efficiently, the job description must be evaluated in order for a salary to be established that is fair and equal in relation to the other positions in the company and in competitive companies. A major consideration is the determination of the best method for paying the employees. Some are paid on a piece basis; for example, an inspector may be paid according to the number of pieces he inspects each day. Another group of employees might be paid on an hourly basis; a machine shop operator would probably be paid this way because the operations that are performed are constantly changing. Other employees might be paid on a weekly or yearly basis, such as the management personnel.

The wage and salary section must also evaluate the performance of each employee to determine the appropriate salary increase. This is known as merit ratings.

In order for a company to obtain the maximum effort from an employee, he must feel that he is a part of the organization. The wage and salary section promotes this by planning and administering incentives such as profit sharing, stock ownership, bonus plans, retirement plans, and others.

The wage and salary division plans and administers the policies on working hours and absences, work schedules, vacation schedules, etc. that are fair to both the employees and the company alike.

The primary responsibilities of this section could be grouped into five major headings: employee classification, rate determination, merit rating, supplemental compensation, and work schedule control. From this one can see the prime role this section has in the overall efficiency of an industrial organization.

OBJECTIVES:

"To develop the students knowledge of and understanding about the wage and salary administration in industry."

1. The student will compare different forms of wage and salary administration charts.

2. The student will solve problems related to wage and salary administration in the student company.

3. The student will carry out wage and salary administration role in class industry.

4. Students will develop, participate and administer a fair and equitable compensation for all of the company employees.

INTRODUCTION:

Wage and salary administration: Insuring that employees are fairly and equitably compensated.

The functions of a complete type of personnel employment staff may be summarized as follows: Employee classification; rate determiniation; merit rating; supplemental compensation; and work schedule control.

SUBJECT MATTER OUTLINE:

Introduce the subject with a definition of Wage and Salary administration.

INSTRUCTIONAL AIDS:

1. Film: Choosing your occupation also choosing your occupational booklet.

2. Speakers from Employment Services on wages.

Employee Classification: Assigning officially each employee a position that is clearly and accurately defined as to its responsibilities and requirements.

1. Prepare job descriptions.

2. Assign a proper title to each position.

3. Periodically audit correctness of job descriptions.

INSTRUCTIONAL AIDS:

1. Job description sheet from local industry.

2. Guest speaker from industry.

STUDENT ACTIVITIES:

1. Students will prepare job descriptions.

2. Assign title to each position.

Rate Determination: Setting dollar values on positions that are fair and equitable in relation to other positions in the company and to similar positions in the competitive labor market.

1. Analyze jobs as described in job descriptions.

2. Evaluate rate jobs.

3. Conduct rate surveys.

4. Develop rate scales.

INSTRUCTIONAL AIDS:

1. Time and motion study sheet from local industry.

STUDENT ACTIVITIES:

1. Students will do time and motion study.

Merit Ratings: Appraising objectively the performances of each employee in relation to the duties and responsibilities of his assigned position.

1. Develop merit rating programs.

2. Conduct merit rating reviews.

3. Analyze merit rating results.

INSTRUCTIONAL AIDS:

1. A job description of each job and the duties and responsibilities of each assigned.

STUDENT ACTIVITIES:

1. Students will develop a reit rating program.

2. Students will conduct merit rating reivews.

3. Students will measure merit rating results.

Supplemental Compensation: Provide monetary incentives, in addition to basic wages and salaries, to promote initiative and achievement.

1. Plan and administer profit sharing plans.

2. Plan and institute stock option plans.

3. Plan and administer bonus plans.

4. Plan and institute retirement plans.

5. Plan and administer incentive plans.

INSTRUCTIONAL AIDS:

1. Resource person from local company that has a profit sharing plan.

2. Refer to unit dealing with stocks and bonds.

STUDENT ACTIVITIES:

1. Plan profit sharing program

2. Student will visit company with profit sharing program.

Work Schedule Control: Establishing working hours and periods of absence with and without pay that are fair to employees and company alike.

1. Plan and administer policies on working hours and absences.

2. Plan and administer work schedules.

3. Plan and administer vacation schedules.

INSTRUCTIONAL AIDS:

1. Have plan showing that some large companies use three 8 hour or four 6 hour shifts.

STUDNET ACTIVITIES:

1. Make up a schedule for vacation

2. Make up a sick leave plan.

3. Make up plan showing other reasons for an employee being absent, other than for sickness.

SUMMARY:

It is important to bear in mind that satisfactory personnel relations are not solely the result of skillful and considerate dealings with people. Employees are obviously concerned with tangible benefits of pay, hours, working conditions, job security and an opportunity to get ahead. These matters, often beyond the scope of personnel staff activity, are usually reflections of the policies, character, and prosperity of the company.

SUMMARY QUESTIONS:

1. How do economic and social factors affect wages and salary policy?

2. What is the effect of supply and demand on wages and salaries.
3. What is meant by merit rating?
4. State some objectives which may be served by merit rating.
5. Discuss the importance of wage and salary policy in an industrial enterprise.

SUGGESTED LESSON PLAN (3).....INDUSTRIAL RELATIONS

NOTE TO INSTRUCTOR:

Industrial relations could be defined as the insuring of a harmonious working relationship between management and employees. In order to achieve this goal, four functions must be performed-communications, collective bargaining, employee discipline, and personnel research.

One of the prime means of maintaining a good relationship is through communicating. The industrial relations division is responsible for providing the ways and the climate for the exchange of information between labor and management. Some of the more common methods are suggestion systems, opinion surveys, grievance procedures, and others.

The Industrial Relations department works with local union officials in negotiating contracts and any other business that may be necessary to maintain accord.

Employee discipline is another major function which requires the development and maintenance of work regulations. Some examples of this would be the rules and regulations for conduct, disciplinary measures, and others.

The development of ways to improve employee attitudes and conditions of work are responsibilities of the Industrial Relations section. To accomplish this objective, personnel techniques and problems must be studied, and improved practices recommended.

In summary we could say that the maintaining of a satisfied working force is the primary responsibility of Industrial Relations. Management must be made aware of problems of labor and in turn labor must be provided explanations for the actions of management. The Industrial Relations area acts as an established channel through which these communications flow.

OBJECTIVES:

1. The student will be able to understand the relationship between management and labor as it is related to communications, collective bargaining, employee discipline, and personnel research.

2. The student will bargain collectively with management for:
    a. Shorter work week.
    b. Absence from class with pay.
    c. More class clean-up time.
3. The student will develop an understanding and appreciation of the dignity of honest work.

TIME ANTICIPATED: 8 - 10 days

INTRODUCTION:

Industrial Relations: Insuring that the working relationship between management and employees, the job satisfaction, and work opportunities for the company's personnel are developed and maintained in the best interests of the company and its employees.

The functions of a complete personnel employment staff may be summarized as follows: Communications; Collective Bargaining; Employee Discipline; and Personnel Research.

SUBJECT MATTER OUTLINE:

Introduce the subject with a definition of Industrial Relations.

Communications: Providing the means and climate for developing ideas and exchanging information throughout the company.

1. Develop channels for presenting information to employees.

2. Plan and administer a suggestion system.

3. Conduct opinion surveys.

4. Develop grievance procedures.

COUNSELOR INTERACTION:

Invite an Industrial Relations Director to talk.

INSTRUCTIONAL AIDS:

Film: Labor Movement Beginning and Growth In America.

Onward and Upward-Industry On Parade.

STUDENT ACTIVITIES:

1. Make a suggestion box.
2. Conduct opinion surveys.
3. Develop grievance procedures.

Collective Bargaining: Attain accord with officially recognized and established employee organizations in the manner best meeting the interests of the company and its employees.

1. Negotiate agreements.
2. Interpret and administer agreements.

COUNSELOR INTERACTION:

Invite a lawyer to discuss legal aspects.

INSTRUCTIONAL AIDS:

1. Film: "You are There at The Bargaining Table"
2. Guest speaker from Georgia State AFL-CIO
3. Guest speaker - Management

STUDENT ACTIVITIES:

1. Guide students in forming a union and establishing its purposes. A few selected students will stage a "wildcat" strike, after which they will negotiate and reach an agreement.

Employee Discipline: Develop and maintain effective work regulations and create and promote harmonious working relationship with employees.

1. Establish rules and regulations for conduct.
2. Establish and administer disciplinary measures.

COUNSELOR INTERACTION:

Make a short survey of what employees like and dislike about the company.

INSTRUCTIONAL AIDS:

1. Film: "Aptitudes and Occupations" (Second Edition) also "Apprentice Training"

STUDENT ACTIVITIES:

1. Introduce on-the-job training to attract potential employees.
2. Chart likes and dislikes about the company in descending order.

SUMMARY:

The control of attitudes and the promulation of company policies. Ideals and objectives are problems in communication between management and employees. Morale, loyalty and cooperation are corollaries of mutual understanding. The worker must be confident of the integrity, fairness, and ability of management. Similarly, management must be aware of the problems and attitudes of the employees. Communications are difficult when the enterprise is so large that personal contacts between the high command and the men in the ranks cannot be maintained. Breakdown of communications is one of the frequent causes on inroads of labor agitators into the ranks of organizations that previously enjoyed close relationships between management and labor.

SUMMARY QUESTIONS:

1. In what ways does collective bargaining effect government?
2. Explain how a union uses collective bargaining?
3. Give example of two rules that would affect employee discipline.
4. What are some of the rules that govern company employees?
5. What is a closed shop? How is it related to industry?

SUGGESTED LESSON PLAN (4)......ORGANIZATION, PLANNING AND DEVELOPMENT

NOTE TO INSTRUCTOR:

The title of this section also defines its responibilities. By analyzing the title, one can see that organization planning is one area, development is another, and training is a third.

The object of organization planning is to determine the structure and manpower requirements of the company. They determine how many people will be needed for the different operations performed on a product.

Manpower development actually states its objectives. This area is responsible for setting up performance standards and determining what positions require extra or specialized training.

In order to develop the manpower of the organization, training must be administered. The development of the personnel to their full potential is the third area of responsibility of this section.

At first glance, one might conclude that this section is not as important as the others in the Personnel Department. In making this evaluation, the purpose of any industry must be kept in mind and that is to make money. The personnel must develop and work to their full potential if this purpose is to be achieved. So the final conclusion should be that this is another vital link in the structure of industry.

OBJECTIVES:

To develop the student's knowledge of and understanding about the organization of the management personnel in industry.

1. The student will construct a line and staff organization chart for use in a class group study of a major industry.

2. The student will apply the principles of good organization in his leadership role in the class.

3. The student will carry out a management role in industry.

4. The student will solve problems related to the management of the student company.

INTRODUCTION:

Organization, Planning and Development--Insuring that the company is effectively organized and capably staffed.

The functions of a complete type of organization, Planning and Development staff may be summarized as follows: Organization Planning; Manpower Development; and Training.

SUBJECT MATTER OUTLINE:

Introduce the subject with a definition of Organization, Planning, and Development.

Organization Planning: Determining the organizational structure and manpower requirements that will most effectively and economically meet company objectives.

1. Analyze key position requirements.
2. Analyze organizational structure
3. Recommend organizational changes
4. Forecast manpower requirements.
5. Forecast manpower resources.

COUNSELOR INTERACTION:

Do a job survey.

INSTRUCTIONAL AIDS:

1. Guest speaker from local industry.
2. An organizational chart of a line and staff organization.

STUDENT ACTIVITIES:

1. Make a line organization chart showing the flow of work to be done in a company.
2. Compile ads for jobs-chart trends

Manpower Development: Establishing performance standards for key positions and identifying areas in which incumbents must grow in order to attain them.

1. Develop performance standards
2. Appraise performance.
3. Plan individual development programs.

COUNSELOR INTERACTION:

Invite representative from industry to discuss their production program.

STUDENT ACTIVITIES:

1. Do time and motion study.

Training: Develop existing personnel to their full potential for attaining established performance standards.

1. Plant training programs.
2. Prepare training programs.
3. Train leaders.
4. Conduct training programs.
5. Evaluate training results.

COUNSELOR INTERACTION:

Catalog information on sources of training.

INSTRUCTIONAL AIDS:

1. Machine demonstration and maintenance.
2. Director of training area vocation school.

STUDENT ACTIVITIES:

1. Students perform machine operation.
2. Preliminary planning of production procedures.

SUMMARY:

Organization of some sort have always existed among groups of people engaged in a common objective. In the simplest form, there is no more "structure" than that of boss or leader with one level of subordinates. As needs arise, the boss assigns tasks to subordinates and directs their efforts. Stable divisions of responsibility or systematized grouping of individuals may not exist.

SUMMARY QUESTIONS:

1. What is an organization?
2. What is meant by the line of an organization?
3. Define staff.
4. What is the difference between authority and responsibility? How are they related?

SUGGESTED LESSON PLAN (5).....EMPLOYMENT

NOTE TO INSTRUCTOR:

The primary responsibility of the employment section in a Personnel Department is to make sure that each position or vacancy in the organization is filled with a person qualified to do the work. This involves a great deal more than simply hiring a person. The requirements and specifications of the job must be studied in order to determine what qualifications are demanded. The employment section must let the public know of the vacancy, and they must select the best means such as radio, newspaper, etc.

After a person has applied for the position, the employment division must analyze his qualifications and make a decision regarding his potential for the job. Once the person is employed, this section is responsible for indoctrination; that is the responsibility of seeing that new employees receive the training and information that is needed to do the job.

Another duty of the employment division is that of promotion and transfer. In order to do this, the job requirements and employee qualifications are carefully studied. If more information concerning an employee's aptitude and abilities are needed, tests are administered. When an employee is chosen for promotion or transfer, they must determine the training he will need before he can take over the new job.

The employment section is also responsible for releasing or firing of employees. This must be done in a manner that is most beneficial to the individual and the company.

From the above list of duties, one can easily see that the employment division is another vital area for the progress of industry. If this area breaks down the entire organization suffers as a result.

HERE IS ANOTHER OPPORTUNITY TO PREPARE STUDENTS TO SAFELY AND PROPERLY OPERATE MACHINES AND MANIPULATE TOOLS IN A MEANINGFUL SITUATION.

OBJECTIVES:

To develop in students:

1. an understanding of hiring procedures which may be used in their corporation.

2. an understanding of a cooperative attitude toward and its relationship to personnel administration.

3. An understanding of compatible working situations among all members of the corporation.

4. Satisfaction in knowing a job is well done.

5. Recognition of the dignity in all honest work.

TIME ANTICIPATED: 5 - 7 days.

INTRODUCTION:

Employment: Insuring that all positions are filled by competent personnel at reasonable cost, is the most basic responsibility of a personnel staff in an organization. It often involves extensive recruiting, scientific appraisal of qualifications, screening of applicants, and the actual assignment to jobs in some cases.

The functions of a complete type of personnel employment staff may be summarized as follows: Recruitment; selection; indoctrination; promotion and transfer; and separation.

SUBJECT MATTER OUTLINE:

Introduce the subject with a definition of employment.

Recruitment: Searching for and attracting applicants qualified to fill vacant positions.

1. Analyze job requirements.

2. Develop job specifications for each position.

3. Analyze sources of potential employees.

4. Develop methods for attracting potential employees.

INSTRUCTIONAL AIDS:

1. Choosing your occupation booklet.

2. Film: "The Bright Young Newcomer", Catalog No. 921.
"Job Evaluation", Catalog No. 1636.

STUDENT ACTIVITIES:

1. Visit several local industries and investigate the methods used for recruitment. Present findings to the classfor discussion and consideration

Selection: Analyzing the qualifications of applicants and deciding upon those who show the most potential.

1. Interview applicants.

2. Test applicants.

3. Investigate references.

4. Evaluate applicants.

INSTRUCTIONAL AIDS:

1. Application forms from local industry

2. Quest speaker. Overhead transparencies.

STUDENT ACTIVITIES:

1. Fill out a self-inventory form.

2. Participate in job interviews and give company test.

3. Formulate interview procedures and forms.

4. Role play as employer or employee.

Indoctrination: See that new employees receive the training and information required to perform their duties effectively.

1. Orient new employees.

2. Determine training requirement of new employees.

3. Follow-up performance of new employees.

4. Show a film on safety.

INSTRUCTIONAL AIDS:

1. Film: Personal Qualities for Job Success", Catalog No. 1502.

2. Booklet, informational - Learn and Train for That Job Under M.D.T.A. and You Can Get That Job.
   (Both books are available free of charge from any Georgia Department of Labor office)

Promotion and Transfer: Placing current employees in positions that better utilize their capabilities.

1. Analyze job specifications.

2. Analyze employee qualifications.

3. Test employees.

4. Evaluate employees.

5. Determine training requirement of employees.

6. Follow up performance in new position

STUDENT ACTIVITIES:

1. Prepare a training program for machine operators and tool users.
2. Train machine operators on safe and proper operation of the machines they will be operating.

INSTRUCTIONAL AIDS:

1. Materials necessary for demonstration.
2. Company made test.
3. Schematics and manuals of machines.

STUDENT ACTIVITIES:

1. Re-test current employees for promotion.
2. Performance test of new work to be done.

Separation: Severing connections with employees in a manner most beneficial to the company.

1. Conduct an exit interview.
2. Analyze turnover.
3. Employees execute evaluation of company.
   (Prepared form of employees' feeling of company employment practices.)

SUMMARY:

Most employment transactions in industry are to satisfy immediate needs. The substantial enterprise also builds for the future. In planning for the future, many concerns periodically employ new men for apprenticeships and as long-term trainees for key positions. The trade schools, colleges, and educational institutions within large industries are the principal sources for this type of employ.

SUMMARY QUESTIONS:

1. Describe the procedures which may be used for determing a candidate's fitness for a job, including job specifications and application forms.

2. What is labor turnover? Explain its significance.
3. Discuss the employment activities as to methods of locating candidates and methods of selection.
4. Describe the ways in which employee training may be accomplished.
5. What is a time and motion study.

EXTERNAL RELATIONS

INTRODUCTION

The Industrial Revolution has had an effect on the growth of external relations. About the year, 1800, little need existed for extensive stockholder relations. Relationships with employers were on a face to face basis. There was little competition with other companies to worry about. Community relations progress was not needed. Everyone knew everyone else.

Now, instead of family-owned operations, firms have evolved into corporations with perhaps over 100,00 stockholders, and they possibly live all over the world. Somewhere along the line, a department for communicating with these people had to have evolved. A company might have 50,000 salesmen, office help, accountants, and production employees. These people need to be informed; their morales must be built; and suggestions need to be made to them. A company might have 25 plants in ten different states and foreign countries. Communication is needed. A company has, maybe, 20,000 customers and fierce competition. There is a problem to keep alive the already established interests in the company and new interests must be won.

It is the responsibility of management to see that policies are understood, accepted, and intelligently applied by management and all employees in developing good relations with people inside, as well as outside the organization.

External relations is a function of every operating department head as well as line and staff executives of the manufacturing, marketing, and finance departments. The policies of each department of a company are designed to maintain good relations with one or more specific publics. Sales policy seeks good relations with cunsumers, distributors, and dealers; purchasing policy cultivates the goodwill of suppliers; and personnel and labor policy works toward improved employee relations.

MODEL EXTERNAL RELATIONS

Week	Instructional Topics	Instructional Aids	Student Activity
	I. COMMUNICATIONS AND INFORMATION	Film: "How to Investigate Vocations"	Illustrate the relation between job & specific job experience.
	A. Attitude & Opinion appraisal	Film: F-1	
	B. Employee information exchange	Transparencies: 1,2,3	Conduct an attitude survey about some industries in your area.
	1.Questionnaires 2.Management 3.Working Conditions	Counselor contact charitable organization	Contact and produce products needed by a charitable organization such as a retarded children's school or orphan's home.
	C. Creditor & Investor communications: 1.Stockholders 2.Profit 3.Wages 4.Services	Industrial Relations News. Industrial Relations Newsletter Inc. 230 W. 41 St., New York, New York	
	D. Public communications: 1.Bulletin boards 2.Letters 3.Magazines 4.Newspapers		Secure resource person from external relations department to talk on requirements and opportunities in his field.
	II. PUBLIC ACTIVITIES CO-ORDINATION A. Civic affair participation B. Association & society relations	Public Opinion Quarterly. Civil Service Assembly of the U.S. & Canada - 1313 E. 60 St. Chicago, Ill. Film: F-2	Prepare information release to public through news media about the operation of the class company
	III. CAREER IN INDUSTRIAL & PUBLIC RELATIONS A. Requirements B. Opportunities	Counselor secure resource person Film: F-3 Counselor Secure Occupational Information	Obtain information on jobs, wages, fringe benefits from industries and employment agencies.

SUGGESTED LESSON PLAN. . . . . .EXTERNAL RELATIONS

NOTE TO INSTRUCTOR:

External Relations is concerned with the image a company has in the community and nation. Its primary objective is the development of goodwill with the public. In order to achieve this goal, attitudes and opinions must be gathered and evaluated. For example, company newsletters or newspapers, magazines, and financial reports may be made available to creditors and investors. Other approaches may be news releases for local newspapers, radio, television. Social, civic and charitable organizations may be evaluated and the extent of company participation determined. Also company participation in industrial, technical, and professional organizations should be decided. All of these responsibilities are handled by this department.

External Relations could be divided into two groups. The communications and information section is responsible for collecting and releasing information that will have a favorable influence on the public toward the company. The second section is concerned with public activities and co-ordination. This division recommends and co-ordinates company participation in civic, social, industrial, technical, and professional organizations.

OBJECTIVES:

To develop in each student the ability to:

1. Define the role which the External Relations Department plays in industry.

2. Identify the kinds of work that is done by External Relations personnel.

3. List the requirements, opportunities and working conditions of External Relations personnel.

INTRODUCTION:

External relations, as a profession or organizational activity, has grown amazingly within the last few decades. Large corporations, medium-sized businesses, and even small companies spend millions of dollars on their external relations department. Six basic areas are involved in external relations. These six are as follows:

1. Communication and Information. Communications and information is an important factor in the running of a company. The attitude of the surrounding public -- both affiliates and non-affiliates -- have great bearing on the company. Without the goodwill, so to speak, of the people, the industry itself will suffer. An example of how an industry will gain with the support of the people is a general one ... An industry informs the people what the industry can do for them -- how it will

aid and benefit them. Favorably convinced, the people support the industry, and the industry thrives.

2. Attitude and Opinion Appraisal. Attitude and opinion appraisal is important to the company. By conducting opinion polls they learn the attitudes the people have about products, procedures, and the company as a whole. When the opinions are learned, they are kept up with. The policies and practices can be evaluated by surveys measuring attitudes and opinions. If through evaluation, a company finds that public opinion is not good, they can plan and recommend methods of improvement.

3. Employee Information Exchanges. Keeping employees informed about what they are doing and how the public feels about what they are doing has a great bearing on their attitudes. Keeping the employees up to date can be done by giving them published or verbal information. This information should be distributed as much and as quickly as possible through announcements, special bulletins, and verbal interpretation.

4. Creditor and Investor Communications. This phase of communications prepares an annual report on pertinent data concerning the company. The Mobile Home Industry uses this technique heavily in their business. Charts, showing company growth or sales, are most prominent. The information found and presented gives a visual support to the reports.

   The creditor and investor communications are in charge of the planning of special and annual stockholder meetings. In this planning, the material to be presented comes from every department. This data is compiled for the presentation to the shockholders. Through this form of communication, the stockholders will get a clear view of the company's movement.

5. Public Communication. Public Communications is probably the busy department in communications and information. This department filters all data to be presented to the open public through written and oral presentation. Before any information can be released, it must be approved or recommended by the Public Communications Department. Effective relations must be maintained with the mass communication media for proper presentation of data. The data that is filtered through this department reflects the company and its activities, therefore, the importance of this department cannot be measured.

6. Public Activities Co-ordination. Public Activities Co-ordination is responsible for determining the extent of participation in public affairs. This division recommends and co-ordinates the company's participation in public projects. Some examples of this would be the evaluation of civic, social, educational, and charitable organizations; recommend form and extent of company support; and finally co-ordinating company participation.

Another activity that this department is responsible for is the extent of company participation in business associations such as industrial, technical, and professional organizations. The same steps are involved in this activity as those previously stated -- evaluation, recommendation, and co-ordination.

This division plays an important role in the image that a company has in the community, state and nation. This image also affects the economic status of the enterprize by the attitude that is exhibited by public toward the product, and also in employment.

SUBJECT MATTER OUTLINE:

I. COMMUNICATIONS AND INFORMATION

- A. Attitude and Opinion Appraisal
    1. Gather and Evaluate public opinions
    2. Recommend methods for their improvement
- B. Employee Information Exchanges
    1. Questionnaires
    2. Management and employees
    3. Working Conditions
- C. Creditor and Investor Communications
    1. Stockholders
    2. Profit
    3. Wages
    4. Services
- D. Public Communications
    1. Bulletin boards
    2. Letters
    3. Magazines
    4. Newspapers

STUDENT ACTIVITIES:

1. Contact and produce products needed by a charitable organization such as retarded children's school or orphan's home.

2. The student will discuss industries or businesses found in their area and discuss the general feelings of the class toward the industry or business.

3. The students will divide into groups, pick a specific extablished business, and evaluate that business through interviews with the public . (outside work)

4. Have a public external relations representative, from a nearby industry, visit the class and give a short lecture on the importance of the communication and information link between the public and the industry.

5. Have the students set up a mock industry, producing a certain product. Have groups to take a poll amoung their peers. This poll would be conducted to determine their general opinions and attitudes. If both good and bad opinions are presented, have the students evaluate the effects of their opinions. With this evaluation, have students plan methods of correcting and improving opinions and attitudes pertaining to their project.

6. Have students compile information which gives good examples of publications of periodicals containing internal information. After they have compiled this information, have the students publish and prepare to distribute these special announcements.

7. After students have set up a mass production project, have each head of the mock command present a report on the aspects of their phase of production.

8. Stage a special stockholders meeting. Have students participate by giving reports and discussing the findings.

COUNSELOR INTERACTION:

Secure resource person from external relations department to talk on requirements and opportunities in his field.

II. PUBLIC ACTIVITIES CO-ORDINATION

A. Civic Affair Participation

1. Recommend and co-ordinate company participation in public project to benefit the nation, community or some segment of the population.

B. Association and Society Relations

1. Recommend and co-ordinate company participation in industry, management, technical and professional organizations.

STUDENT ACTIVITIES:

1. Prepare information release to public through news media about the operation of call company.
2. Have a company representative speak to the class on maintaining effective relations with mass communications media.
3. Have students prepare an article for the local newspaper which will contain information about their mass production project.
4. Determine what will be done with the profit from the company. Also determine what technical and professional organizations the company should be members of.
5. Bring in clippings from newspapers and periodicals on industrial participation in public projects.
6. Visit a local industry and make a list of the civic affairs and business associations of which they participate.

III. CAREER IN INDUSTRIAL AND PUBLIC RELATIONS

A. Requirements

B. Opportunities

STUDENT ACTIVITIES:

Obtain information on jobs, wages, and fringe benefits from industries and employment agencies.

SUMMARY:

1. The external relations department must know the corporations plans and policies in order to decide what information to release.
2. It is important that the external relations department portray a favorable image of the company to the public.

SUMMARY QUESTIONS:

Completion:

1. Planning what information to release is one of the ____________ ____________ departments activities.
2. Stimulating better feelings between ____________ and ____________ is one function of the External Relations.

3. The ______________________________ department helps in the preparation and distribution of facts to stockholders.

Essay:

1. Name a corporation that you think has a good external relations department and explain why you feel this way.

2. What relation does the external relations department have with the news media?

SECRETARIAL AND LEGAL AFFAIRS

INTRODUCTION

This unit in secretarial and legal affairs is organized to give students an insight into the duties and responsibilities of legal and secretarial affairs as they relate to industries.

This unit is designed for one period a day, five days a week. The information titles are suggestive of the lesson content intended. Some suggestive lesson plans follow the unit outline. Other lesson plans may be prepared by those who plan to follow suggested outlines.

SECRETARIAL:

Definition: Secretarial functions in a corporation are advising, preparing, executing, and protecting announcements and records. Also involved are documenting actions, or intended actions of company owners, their elected representatives, and the corporation as a legal entity.

Description: The primary responsibility of the secretarial section is to keep the stockholders well informed on the wide range of activities that contribute to corporate growth and health. The secretarial staff is in constant touch with the financial community, passing on information about the company, good or bad, which will be helpful in the public evaluation of company performance and prospects. The staff keeps the corporation informed about the annual meeting. This meeting is really a forum, an opportunity for management and shareholders to meet on a face to face personalized basis.

The secretarial staff prepares a report which informs stockholders who were unable to attend the annual meetings, of the discussions, questions, and answers between management and stockholders.

LEGAL:

Definition: The legal functions are performing, or causing to be performed, such duties as are required by law or by-laws of the corporation and appraising and advising the company on all phases of its operations and relations from a legal viewpoint.

Description: A company, corporation, or industry in general, is governed and regulated first, by the laws of the land: second, by the provisions of its charter; and third, by its by-laws.

This part of the activity can be broadly defined as performing all duties and actions that are required in following the statutory obligations of the local, state, and national governments· plus the charter and by-laws of the company.

Legal affairs must appraise, advise, counsel and prepare documents for the company in accordance with the charter and by-laws.

Provisions are made in the charter affecting the charter itself, the by-laws, stock, voting and director's responsibility.

By-laws provide for such details as organization, administration and business routine which are not prescribed by the charter.

The legal aspects of this activity area may be divided into corporate affairs, employee affairs, financial affairs, and patent affairs.

MODEL SECRETARIAL AFFAIRS

Week	Instructional Topics	Instructional Aids	Student Activities
	I. SECRETARIAL FUNCTIONS		Make a notice for a meeting
	A. Stockholders Affairs	Newspapers Wall Street Journal Local Newspaper	Make resolutions requiring action
	1. Advise and prepare	Filmstrip: "How to Conduct a Meeting"	Prepare announcements
	a.agendas b.proxy statements c.resolutions	General Industry Transparencies #1,2, 3,18,19,21, & 22	Write agendas for meetings Prepare documentary records
	B. Board of Directors Affairs	Secretary recording book	Record minutes of meeting
	1. Advise and prepare		Give financial reports
	a.agendas and resolutions b.minutes and other records		Classify and file records Advise members on current affairs of the company
	C. Corporate Affairs	Slides: American Industry Slides #18,21,22, & 23	
	1. Prepare reports 2. Maintain legal documents		write claims for a stockholder
		Stock Certificates	Keep record of stock transfer
		Occupational Exploration Kit	Make a job analysis
		Chronicle Career Kit	Invite a secretary as a resource person
		D.O.T.	
		Widening Occupation Roles Kit	Make a chart showing the duties and salary range

MODEL LEGAL AFFAIRS

Week	Instructional Topics	Instructional Aids	Student Activities
	II. LEGAL FUNCTIONS A. Corporate Affairs 1. Counseling and preparing legal documents 2. Advising on all matters involving the company B. Employee Affairs 1. Counseling on and preparing legal instruments 2. Representing the company employee relationships C. Financial Affairs 1. Preparing and counseling on documents 2. Representing the company with transactions D. Patent Affairs 1. Counseling on preparing documents 2. Representing the company with the protection of products	General Industry Transparencies #19, 21, & 23 Film: "How To Conduct Discussion" Filmstrip: "Working Together" (Labor & Management) Charts: New York Stock Exchange common Stock Index Newspaper: Wall Street Journal	Write a charter Write an article for the newspaper Make copies of a legal city license Organize a strike Invite a union representative Organize the financial structure for the corporation Make copies of a patent for the product
		Occupational Exploration Kit Chronicle Career Kit Filmstrip: "Are Manners Important" "Are you a good citizen?" Game: Collective Bargaining	Make a job analysis Write a short story concerning legal counsel Invite a lawyer as a resource person

SUGGESTED LESSON PLAN (1) . . . . SECRETARIAL AFFAIRS

NOTE TO INSTRUCTOR:

This lesson deals with the secretarial affairs and might be received better by the students if they could visualize a setting such as the secretary's office. The equipment would include desks, chairs, typewriters, adding machines, dictaphone or other recording machines, and secretary-size filing cabinents.

This facility, if not an integral part of the corporation business office, would probably be very close to it because outgoing correspondence, signed by company representatives, frequently have binding consequences.

OBJECTIVES:

1. To interest the students by involving them in meaningful exexperiences of secretarial affairs.
2. Students will exhibit a basic knowledge of the background information, advantages and disadvantages in secretarial affairs.
3. Students will have practical experience in agreement negotiations.
4. Students will have a basic knowledge and ability to perform the activities related to secretarial work.
5. Students will gain an understanding of corporate affairs.
6. Students will have a basic knowledge of the stock exchange and how it affects corporations.
7. Students should have an understanding of corporation laws.
8. Students will demonstrate an understanding of the importance of legal and secretarial affairs in a corporation and will be able to relate his understanding to every day problem and decision making.

INTRODUCTION:

This lesson plan is designed as one part of a unit on secretarial and legal affairs in industry. It is assumed that the entire class will be given a broad view of the secretarial and legal affairs through lectures, reading assignments, and films at the beginning of this unit.

Every company or industry must have a system for leadership and organization.

The primary responsibilities of the secretarial and legal affairs sections are to keep the stockholder well informed on the wide range of activities that contribute to corporate growth and health.

The functions of a complete secretarial and legal affairs of personnel employment staff may be summarized as follows:

1. Stockholder Affairs
2. Board of Directors Affairs
3. Corporate Affairs

SUBJECT MATTER OUTLINE:

I. STOCKHOLDER AFFAIRS

   A. Securing Stockholders' Approval

      1. The duties of stockholders

      2. The legal counsel of stockholders

         a. The individual stockholders
         b. The rights of collective stockholders

            i. Stockholders right to sell
            ii. Stockholders right to vote
            iii. Stockholders right to inspect the records

COUNSELOR INTERACTION:

Game - Collective bargaining --SRA

Occupational Exploration Kit --SRA

Widening Occupational Roles Kit--SRA

Filmstrip (1) "Are Manners Important?" (2) Are You A Good Citizen?" (3)"Control Your Emotions"

INSTRUCTIONAL AIDS:

1. Newspaper, Magazine, and Textbook

2. Overhead projector and Filmstrips

3. Films: (Catalog of classroom teaching for Georgia Schools (Secretary, A normal Day); (Secretary Taking Dictation); and (Secretary Transcribing).

4. General Industry Transparencies 1, 18, 19, 20 and 23

SUGGESTED STUDENTS ACTIVITIES:

1. Make a job analysis of secretary
2. Invite the school secretary to speak to the class
3. Make a chart listing the responsibilities of a secretary in a corporation
4. The students will formulate a company. In order to operate, they will sell stock to other members of their company.
5. Students can make up shares and determine how much each share of stock should sell for.
6. Write claims for the stockholders. Encourage students to attend a stockholders meeting.
7. Give financial report
8. Have the students take minutes and other records of stockholder actions in regards to the meeting and report this information to those members who could not attend.

II. SECRETARIAL AFFAIRS AND THE BOARD OF DIRECTORS

- A. The owners or stockholders elect a board of directors
    - 1. The board elects officers
    - 2. Determines the profits
        - a. Shares of stock
        - b. Actions of owners
            - i. Agendas and resolutions
            - ii. minutes and records
            - iii. committee structure

INSTRUCTIONAL AIDS:

1. Overhead Projector and General Industry Transparencies #1,18, 19, 20 and 23.
2. Filmstrips, 16mm Projector

SUGGESTED STUDENT ACTIVITIES:

1. Students may elect a board of directors for their company. Each share of stock will count as one vote.
2. Have a board of directors meeting in regards to the project.

3. Students will be encouraged to attend a board of directors meeting of some company close to the school.

III. CORPORATION AND SECRETARIAL AFFAIRS

    A. Company

    B. Stockholders Approval

        1. Preparing legal documents

        2. Advising on:

            a. taxes
            b. subsidiary companies
            c. power of directors
            d. power of officers
            e. Power of stockholders

INSTRUCTIONAL AIDS:

1. Overhead Projectural

2. Films movie projector 16mm and Text book

SUGGESTED STUDENT ACTIVITY:

1. Students may draw up a charter for their corporation.

2. Students may check into the legal aspects of selling the product.

3. Students may check to see if the product has ever been patented.

TEACHING NOTES:

1. Newspaper - Select ads in paper showing salaries, experience necessary, and education required for jobs.

2. The board of directors has final authority in all corporate matters except those reserved for the stockholders.

3. The term of office is usually one to three years, but it is common for members to be re-elected.

4. Each state has laws which tax the corporation's income. These taxes regulate the sale of its securities.

5. Whether or not the corporation has interstate business, the federal tax on the income must be paid.

6. In a merger one company is absorbed into another and the absorbed company ceases to exist.

7. An agenda is a list of things to be dealt with at a meeting.

EVALUATION:

1. If the legal counselor were made an officer in the company, which of the three above is he best prepared to become?

2. If you were president of a company, and wished to remain so, should you be careful what was mailed out over your signature? Why?

NOTE TO INSTRUCTOR:

The functions of the legal affairs activities of industry may be divided into corporate affairs, employee affairs, financial affairs, and patent affairs.

SUGGESTED LESSON PLAN: (2). . . . . LEGAL AFFAIRS

I. CORPORATE AFFAIRS

   A. Company Incorporation

      1. Stockholder approval

      2. Preparing legal documents

      3. Advising on:

         a. Taxes
         b. Subsidiary company
         c. Affiliated companies
         d. Power of directors
         e. Power of officers
         f. Power of stockholders

INSTRUCTIONAL AIDS:

1. Charts:

   a. New York Stock Exchange Common Stock Index
   b. How an order is excuted on the New York Stock Exchange
   c. Stock certificate

2. Reference Books:

   a. Portfolio of Teaching Aids, New York Stock Exchange, N.Y.
   b. Index to Legal Periodicals, H.W. Wilson Co., Vol. 62, 6-6 No. 9.
   c. Dacey, Norman, How to Avoid Probate, Crown Pub. Inc. N.Y., 1965.

3. Newspapers:

   a. Wall Street Journal

STUDENT ACTIVITIES:

1. Study textbook, You and the Investment World, page 7-16.
2. Bring in daily New York Stock Exchange from the local paper.
3. Bring in examples of stock and/or legal documents.
    a. Branch office of New York Stock Exchange.

II. EMPLOYEE AFFAIRS
    A. Counseling the company: advising
    B. Compensation matters
        1. Welfare matters
        2. Employee agreements

COUNSELOR INTERACTION:

1. Invite a lawyer to speak to the class.
2. Orient students by preparing questions prior to the lawyer's visit.
3. Make a job analysis of the field of law.
4. Discuss a lawyer conducting personal affairs in court.
5. Role playing - "A lawyer defending an employee in the corporation" and "A lawyer defending the corporation."
6. Secure an application for a workers permit. Discuss the Child Labor Law. If possible, invite a labor representative from the state employment office.
7. Write a short story depicting the importance of loyalty to the corporation or when legal counsel is necessary.

INSTRUCTIONAL AIDS:

1. Transparencies illustrating how group demands are met more readily than individual demands. (Modern Industry Transparencies)
2. Examples of union badgers and union membership cards.
3. Employer's first report of injury Form.
4. Film: "Fortune Seekers, Catalog #1029 State Film Library.

STUDENT ACTIVITIES:

1. Students will find an article in the newspaper or magazine concerning collective bargaining and will write their own interpretation of it.

2. Each student will write a report on labor unions and their advantages and their disadvantages. Be prepared to give this report in class.

3. The union group and management group will draw up a plan for the payment of compensation in their case (they will include payment for sickness).

4. After reading union articles, students should discuss the question, "What is a Union?"

5. Students will elect union officers: President: Vice-president Secretary, and Treasurer.

III. FINANCIAL AFFAIRS:

A. Credits (When one uses trade credit one merely relies on credit purchases of materials, tools, or equipment. Credit instruments used in this manner are legally called notes.

B. Advantages of credit

1. Disadvantages of credit

2. Advantages and disadvantages of owner financing.

3. Advantages and disadvantages of bonds

4. Advantages and disadvantages of common stock

5. Advantages and disadvantages of perferred stock

INSTRUCTIONAL AIDS:

1. Charts and graphs

a. A Portfolio of Teaching Aids
b. Dr. Allen O. Felix
c. New York Stock Exchange
11 Wall Street
New York, N.Y. 10005

2. Films·

"What is a Corporation?"
Coronet Films
Coronet Building
Chicago, Illinois 50501

3. Using Bank Credit
   American Banker Association
   12 East 36th Street
   New York, New York 10017

STUDENTS ACTIVITIES:

1. Take the class on a field trip to observe the finance department of an industry.

2. Have a speaker from a finance department come in to speak to the class.

3. Set up a finance department in the industry that the students have organized in your class to determine the flow of money in their company while mass producing some product of their choice.

IV. PATENT AFFAIRS

A. Counseling on Protection of products and processes

1. Trade names

2. What is a patent

   a. What is the term of a patent
   b. May the term of a patent be extended
   c. Who may obtain a patent
   d. How does one apply for a patent
   e. Where may a search be conducted

INSTRUCTIONAL AIDS:

1. Organization For Production, By Roscoe, page 90-91 page 481-482, and page 515.

2. Organization for Production, By Amrine, page 444-445

3. The Story of the American Patent System, United States Patent Office, Washington D.C.

STUDENT ACTIVITIES·

1. Have students to draw up a protective patent for some elements of design in the product being manufactured.

2. Have the student to make a list of questions to ask a corporation president before an interview or class visit.

TEACHER NOTES·

1. Students will be given a brief introduction to collective bargaining by being asked the question: "If all of you were working for a company and you wanted a 25¢ raise, what would

be the best method to use to insure a raise? After the question has been discussed, introduce "collective bargaining to the class. Explain this term by saying collective bargaining is people joining together collectively for a common goal.

2. Student will be divided into two groups. One group represents laborers or non-supervisory personnel and will be members of the union. The other group would be supervisory personnel and will represent management.

3. Examples of union badges and membership cards will be shown to the class. Students will be assigned to make union badges and cards for the members of the union.

4. Students will be asked to write brief reports concerning workmen's compensation.

5. Student will be shown an application for compensation.

6. Once the corporation laws are drawn up, the union will announce to the members that they are unfair. Management will be informed of the union position. They will be asked then to meet and negotiate.

EVALUATION:

1. What compensations, other than salary or wages are sometimes given employees by corporations?

2. What advantages can be derived from appointing key persons to form a committee and assigning them a problem that each can contribute to the solution?

INSTRUCTIONAL AID APPENDIX

INSTRUCTIONAL AIDS:

Film #1483 WORKING SAFELY IN THE SHOP

Presents the three essential points of shop safety: how to keep a shop safe for work; how to dress for safety while working in the shop; and how to operate safely such tools as the grinder, circular saw, jig saw, drill press, jointer, lathe, and disk sander. 10 min. FS 1

Source: Regional Film Library
Georgia State Department of Education

SURVEY OF OCCUPATION MATURITY

Prepared by participants in Institute. See Appendix for copy.

PERSONAL DATA QUESTIONNAIRE

Prepared by participants in Institute. See Appendix for copy.

KUDER GENERAL INTEREST SURVEY, FORM E

This survey measures an individual's degree of preference for activities in ten areas. Particularly effective for use with junior high school students as part of a comprehensive exploratory program. Vocabulary is on sixth grade level. Suitable for grades 6-12.

Source: Science Research Associates
259 East Erie Street
Chicago, Illnois 60611

WHAT I LIKE TO DO, A SURVEY OF CHILDREN'S INTEREST

This easy-to-read interest inventory identifies a youngster's preference in art, music, social studies, active play, quiet play, manual arts, home arts, and science. Suitable for grades 4-7.

Source: Science Research Associates
259 East Erie Street
Chicago, Illinois 60611

OHIO VOCATIONAL INTEREST SURVEY

Designed to assist students with their educational and vocational plans. With its Data-People-Things approach to occupational counseling, OVIS is ideally suited for group and individual exploration of the world of work. Must be computer scored by company.

Source: Harcourt, World & Brace
757 Third Avenue
New York, New York 10017

ORGANIZATION

SUGGESTED FILM LIST

1. PRODUCTIVITY - KEY TO AMERICA'S ECONOMIC GROWTH
Free (1964) Color 28 min.

This film reviews some of the new innovations gotten through research. Some of these are improved cars, cyclotrons, airplanes, and gem machining. What's in the future? Proving grounds and market surveys will tell this to some extent. (sh)

2. TO REACH THE DAWN Free (1966) Color 28½ min

This is the story of the Reynolds Metals Company. It follows R. S. Reynolds from his courting days, his cleanser factory, World War I, his four sons, World War II, aluminum production and products of peace to a world wide organization. (jh,sh)

3. WORLD OF HENRY FORD, THE Free (1963) Color 35 min.

This film goes through the life of Henry Ford. It begins at his birth and looks at the world scene at that time. Topics covered are the quadracycle, early auto racing, better roads, urbanization, tractors, international relations, Rouge plant, modern facilities and trends. (jh)

4, GOING PLACES Rental: $2.40 Color 10 min. #CSC-322

This film is animated. A fictitious company is formed and develops into a huge industry. The film covers all major concepts of American industry. A good introduction and follow-up discussion is needed to reduce the humor that is present.

5. MODERN CORPORATION Free (1966) Color 30 min.

This is the story of the formation and operation of a corporation. It starts from a single owner proprietorship, goes to a partnership, and leads to a corporation. Each is explained very well. Such topics as balance sheets, liabilities, dividends, assets, net worth, and stock exchanges are discussed. There is also a discussion of competition among corporations. (jh, sh)

6. EDDIE INCORPORATED Rental: $1.50 (1960) Color 30 min.

This film describes some of the basic principles of a corporation. A youngster wants to set up a lemonade stand and goes to see a lawyer about incorporating. The lawyer points out the need to keep a balance between employers, investors, and customers. Such things as community relations, research, and marketing also are covered. (elem. jh)

7. HELP YOURSELF TO OWNERSHIP   Free   (1955) B&W   10 min.

This film takes a brief look at the cooperatives. Many different types of cooperatives are discusses as well as what benefits the members receive from belonging to a cooperative. (jh)

8. SMALL BUSINESS, U.S.A.   Free   (1958) B&W 33 min.

This is the story of main street. Enterprises come and go because they can or cannot meet competition. There is no one formula for success, but necessary ingredients include merchant instinct, know-how, buying skill, selling skill, financial management, record keeping, willingness to take advice, and integrity. (jh, sh)

9. BRIDGE, THE   Free   (1964) B&W 20 min.

This film shows how industry can operate with school official in fighting against high school students dropping out of school. Several programs are described. These include STEP (Solution To Employment Problems), work-study and Knock-Out Drop-Out programs. (jh)

FILM SUPPLIER'S DIRECTORY

1. DOALL COMPANY
Film Librarian
254 North Laurel Ave.
Des Plaines, Illinois 60016

2. ELLIOTT FILM COMPANY
1114 Nicollet Avenue
Minneapolis, Minn. 55403

3. FORD MOTOR COMPANY
Ford Film Library
The American Road
Dearborn, Michigan 48121

OR

4316 Telegraph Avenue
Oakland, Calif. 94609

4. AUDIO-VISUAL CENTER
Indiana University
Bloomington, Ind. 47405

5. EDUCATIONAL FILM INC.
201 North Occidental Road
Los Angeles, California

6. THE AMERICAN LEGION

7. MIDLAND COOPERATIVES
ATTENTION: LIBRARY
739 Johnson Street, N.E.
Minneapolis, Minn. 55413

8.

9. NATIONAL ASSOC. OF MANUFACTURERS

FILMSTRIP LIST:

WIDENING OCCUPATIONAL ROLES KIT, Grades 6-9

Work gives each student the opportunity to explore for himself the complex areas of career opportunity. The kit is designed to help the student expand his knowledge of the world of work, to recognize families of related jobs, to develop a deeper understanding of his own abilities and interests, and to learn about the type and extent of education needed to prepare adequately for various occupations.

Order from: Science Research Associates, Inc., 259 East Erie Street, Chicago, Illinois 60611

5-2200 Widening Occupational Role Kit	List:	$199.00
	Net:	149.50

Filmstrip - qualify for purchase under ESEA & NDEA

PREPARING FOR THE JOBS OF THE 70's #D-213

Investigates the changing economic and cultural patterns as we move into the 1970's, and relates them to the education and training required today to meet the needs of the next decade. Two full-color filmstrips; 2 2"(p seconds) Part 1 76 frames /15 min. Part 2: 69 frames /14 min. Library of Congress #Fi A 663626 $35.00

GUIDANCE ASSOCIATES/HARCOURT Broce and World, Pleasantville, New York 10570

PREPARING FOR THE WORLD OF WORK D-188

Underscores the need for the student to begin planning early for many occupations, and suggests what kind of information his counselor can provide. Helps establish some guideline for students in judging whether or not they possess the aptitudes required for specific job families. Five major areas: home economics, trade and industry, agricultural, distributive, and business. Two color filmstrips; 2 12" lp second Part 1:60 frames, 12½ min. Part 2: 84 frames/16¼ min. - Library of Congress A66-3119
Guidance Associates $35.00

RESEARCH AND DEVELOPMENT

FILMS

1. INDUSTRIAL RESEARCH - KEY TO PROGRESS Free B&W 14 min.

This film reviews some of the new innovations gotten through research. Some of these are improved cars, cyclotrons, airplanes, and gem machining. What's in the future? Proving grounds and market surveys will tell this to some extent.

NATIONAL ASSOCIATION OF MANUFACTURERS, Film Bureau, 277 Park Avenue, New York, N.Y. 10017

2. PHOTOGRAPHY AT WORK Free Color 60 min.

This film is narrated by Chet Huntley. It shows the vast uses of photography in industry for the purpose of research. They use time lapse and high speed up or slow down action. Some of the interesting processes that are shown are explosive metal forming and multiple soldering in electronics. The first half of the film is very applicable to manufacturing.

EASTMAN KODAK, Film Library Rochester, N.Y. 14650

3. SEVEN GUIDEPOSTS TO GOOD DESIGN Free Color 14 min.

Analyzes the principles of design in articles of everyday use, such as houses, furniture and tableware.

STATE DEPARTMENT OF EDUCATION, Film Library, Atlanta, Ga.

4. CAVALCADE OF FIBERS Free Color 18 min.

This film is concerned with the evolution of synthetic fibers. It starts by giving a brief history of natural fibers and early methods of weaving them. It then goes into the development of rayon, acetate, and nylon. There is also a discussion of fundamental and applied research.

DUPONT DENEMOURS & CO. INC., Motion Picture Section, Advertising Department, Wilmington, Delaware 19898

5. MAN-MADE MIRACLES -- INDUSTRY ON PARADE Free B&W 12 min.

This film looks briefly at synthetic materials that man developed. Included are artificial plasma, cortisone, rubber, gems, plastics and clothing.

NATIONAL ASSOCIATION OF MANUFACTURERS, Film Library, 277 Park Avenue, New York, N.Y. 10017

6. THE LANGUAGE OF DRAWING Free 1594 9 min.

Show the importance of mechanical drawing as a basic language for the building world by presenting examples from many types of jobs which require either the giving or the following of instruction.

GEORGIA STATE DEPARTMENT OF EDUCATION, Film Library, Atlanta,
Georgia

7. AMERICAN LOOK -- INTRODUCTORY AND DEVELOPMENTAL AREAS
Color Free 29 min.

The film shows modern designs brought about by designers today. Discusses packaging and design principles along with design procedures. They make use of many materials.

JAM HANDY ORGANIZATION, 2821 E. Grand Boulevard, Detroit,
Michigan 48211

8. AGRICULTURE, RESEARCH AND YOU Free 1964 Color 28 Min

Research has created a new dynamic agriculture with the primary need being to change unproductive land into productive land. Work is being done to fight plant diseases, produce better quality products, return land to production through irrigation, meet the demands of the customer and controlling animal diseases.

9. CHANGE FOR THE BETTER Free Color 20 min.

This film is concerned with change and how aluminum is the cause and result of modern change. Change has also been advanced by the television and transistor radio. There are some good shots of the "good old days".

ASSOCIATION FILMS, INC., 561 Hillgrove Avenue, LaGrange,
Illinois 60525

10. A BETTER WAY Free Color 30 min.

There must always be a better way. Numerical control is the answer to making things better. Tapered run machines used in shipbuilding are much more efficient than ordinary tooling methods. Instead of handfilling candle forms, automatic machines now do this with the use of a computer, telecredit nabs a burglar in the act. Many industries are finding numerical control the answer to more efficient, more economical and more profitable business.

MODERN TALKING PICTURES

11. CROSS SECTION OF AMERICA Free Color 22 min.

This film shows all of the tests that automobiles are put through at the General Motors proving grounds at Milford, Michigan.

GENERAL MOTORS CORPORATION, Public Relations Staff, Film Library, General Motors Building, Detroit, Michigan 48202

12. MEN AND MACHINES, OF Free Color 27 min.

A group of production research men work to improve production of telephone parts. The film shows many of the problems that men encounter in new methods of production and how they are solved.

STERLING MOVIES, U.S.A., Inc., 43 W. 61 Street, New York N.Y. 10023

13. ALUMINUM IS NOT ONLY ALUMINUM Free Color 12 min.

This film is centered around the theme, "You get more than 16 ounces in every pound from Alcoa". It is a summation of the various extras given an Alcoa customer. These include design services, research and development facilities, manufacturing assistance, sales aids, and advertising support. Alcoa's modern handling equipment is thoroughly explained. Early movie flash backs add a bit of delightful nonsense to the film.

ASSOCIATION FILMS, INC., 561 Hillgrove Avenue, LaGrange, Illinois 60525

14. WONDERFUL WORLD OF QUALITY PAINTS, THE Free Color 15 min.

The O'Brien Corporation is constantly working to improve the beauty, methods of application, and life of their paints. This film looks briefly at the various of their research department. Quality control is emphasized. There is a short section on the manufactured paint from raw materials.

THE O'BRIEN CORPORATION

15. BIGGEST SHOVEL Free Color 12 min.

This is the story of the world's largest shovel. It was designed and built by Bucyrus-Erie to pick up their sales. It's formally called the 38-50B stripping shovel and stands 220 feet high. The films shows designing, making of parts, putting it together on the scene and its actual operation.

BUCYRUN-ERIE COMPANY, Sales Promotion Division, P.O. Box 56 South Milwaukee, Wisconsin 53172

16. MOLTEN MAGIC Free Color 12 min.

A brief history of glass blowing as done in Jamestown is shown. The need for glass bottles became evident and bottling machines had to be invented. Animation shows how these bottling machines work.

GLASS CONTAINERS MANUFACTURERS INSTITUTE, INC., Director of Information, 99 Park Avenue, New York, N.Y. 10016

17. PORTRAIT IN PLASTICS Free Color 20 min.

This is the story of George Eastman and his work. His first work was with photographic films and cameras. Then he stumbled onto plastics. The process of producing some of these are shown along with testing, and their application.

EASTMAN KODAK, Film Library, Rochester, N.Y. 14650

18. SEEING IS BELIEVING Free B&W 10 min.

This film shows a movie camera developed that will take 400 pictures per second. It was developed to aid the engineer or repairman in using slow motion to analyze how a machine is working. Somethings such as milk dorpping into coffee, popcorn popping, soap bubbles bursting, milling machines cutting, and some switching equipment are shown using this slow motion camera.

RESOURCES OF REFERENCES

Research and Development Function
The Market Orientation of Research and Development
Common Body of Knowledge
American Management Association
347 Madison Avenue
New York, N.Y.

Chemistry of Petroleum Refining
American Petroleum Institute

This Is Oil-Refining Oil for Energy - The Story of Manufacturing
Shell Oil Company
Public Relations Department
Tulsa, Oklahoma

The Story of The American Patent System
Supt. of Documents, U.S. Printing Office
Washington, D.C. 20402

Industrial Research Report or magazine
P.O. Box 2689
Clinton, Iowa 52732

How Basic Tools Created Civilization
DoAll Company
254 North Laurel Avenue
Des Plaines, Illinois

General Industry
Lindbeck and Lathrop
Chas. A. Bennett, Inc.
Peoria, Illinois

Manufacturing In The School Shop
Hawes, Robert & Schaefer
American Technical Society
Chicago, Illinois

Design for Decision
Bross, Irwin
The Macmillan Co.
New York, N.Y.

American Forest Product Industries
1835 K. Street, N.W.
Washington, D.C. 20006

COUNSELOR INTERACTION:

Source: Catalog of Classroom Teaching Films (free to Ga. schools
State Department of Education
Atlanta, Georgia

1. JOBS IN ATOMIC ENERGY

   Shows various diversification of employment opportunities provided by development of atomic energy, also scientists, technicians, and labors at work in atomic research, power production, agriculture, medicine, and industrial application.

2. PLANNING YOUR CAREER

   Advises students to plan their career in three steps: (1) learn about themselves; (2) find out about careers that interest them; and (3) compare themselves to the requirements of selected vocations.

3. SCIENTIFIC METHOD

   Presents the scientific method as a tool for the logical solution of problems. Outlines the steps of the scientific method; illustrates that the method can work in many areas; and demonstrates the phases of the method.

4. SCIENTIFIC METHOD IN ACTION

   Uses experiments of Galileo and Dr. Jonas Salk to illustrate steps in the scientific method, and also man's use of this method in his daily activities and understanding the world about him.

Source: Chronicle Guidance Publications, Inc., Moravia, N.Y.

5. FINDING YOUR ORBIT - Student Record Book

The purpose of this booklet is to develop in the student the ability to think of himself in terms of his abilities, interests, and aptitudes and to utilize this information in investigating realistic post-school occupational and educational opportunities. It attempts to help the student ascertain, accept, understand, and apply the revelant facts about himself to the pertinent facts about the occupational and educational world which he will learn through a program of planned exploratory activities.

Source: Educators Guide to Free Filmstrips
Educators Progress Service
Randolph, Wisconsin

6. MOMENT OF DISCOVERY (about the work of scientists)

Source: Proctor and Gamble Company
Public Relations Department
P.O. Box 599
Cincinnati, Ohio

7. MARKET RESEARCH MANAGEMENT

8. RESEARCH AND DEVELOPMENT

9. INDUSTRIAL ENGINEERING MANAGEMENT

10. ENGINEERING DEVELOPMENT

11. ENGINEERING

Source: Guidance Associates
Pleasantsville, N.Y.
Type: Records and filmstrips

12. HIGH SCHOOL SELECTION AND YOUR CAREER, Parts 1 and 2

Source: Science Research Associates, Inc.
259 East Erie Street
Chicago, Illinois 60611

13. JUNIOR OCCUPATIONAL BRIEFS

The kit contains 400 briefs arranged according to interests and educational levels. Interests are arranged by jobs dealing with things, people and animals, and ideas. Educational levels are based on jobs requiring high school or less, high school plus special training, and college graduation or graduate school.

5. FINDING YOUR ORBIT - Student Record Book

The purpose of this booklet is to develop in the student the ability to think of himself in terms of his abilities, interests, and aptitudes and to utilize this information in investigating realistic post-school occupational and educational opportunities. It attempts to help the student ascertain, accept, understand, and apply the revelant facts about himself to the pertinent facts about the occupational and educational world which he will learn through a program of planned exploratory activities.

Source: Educators Guide to Free Filmstrips
Educators Progress Service
Randolph, Wisconsin

6. MOMENT OF DISCOVERY (about the work of scientists)

Source: Proctor and Gamble Company
Public Relations Department
P.O. Box 599
Cincinnati, Ohio

7. MARKET RESEARCH MANAGEMENT

8. RESEARCH AND DEVELOPMENT

9. INDUSTRIAL ENGINEERING MANAGEMENT

10. ENGINEERING DEVELOPMENT

11. ENGINEERING

Source: Guidance Associates
Pleasantsville, N.Y.
Type: Records and filmstrips

12. HIGH SCHOOL SELECTION AND YOUR CAREER, Parts 1 and 2

Source: Science Research Associates, Inc.
259 East Erie Street
Chicago, Illinois 60611

13. JUNIOR OCCUPATIONAL BRIEFS

The kit contains 400 briefs arranged according to interests and educational levels. Interests are arranged by jobs dealing with things, people and animals, and ideas. Educational levels are based on jobs requiring high school or less, high school plus special training, and college graduation or graduate school.

14. WIDENING OCCUPATIONAL ROLES KIT (WORK)

A student record book, grades 5-9 The purpose of this booklet is to foster vocational maturity by and understanding of himself; broaden his knowledge of the world of work; acquaint him with the training necessary for a variety of vocations; and promote his understanding of other people and their work.

Source: U.S. Department of Labor
Bureau of Labor Statistics
Suite 540, 1371 Peachtree Street, N.E.
Atlanta, Georgia 30309
Cost: Free in single copies

15. THE MANY FACES OF TECHNOLOGY

16. SYSTEM ANALYST: A SOFTWARE SPECIALIST

Source: U.S. Department of Health, Education and Welfare
Office of Education
Washington, D.C. 20202

17. CAREERS IN TECHNICAL OCCUPATIONS (OE-80032)

Source: U.S. Atomic Energy Commission
Division of Technical Information Extension
P.O. Box 62
Oak Ridge, Tennessee 37830

Type: Short Papers and booklets

18. USAEC: WHAT IT IS, WHAT IT DOES?

19. RADIOLOGICAL HEALTH SPECIALISTS AND TECHNICIANS

20. SHOULD YOU BE A SCIENTIST

Source: General Electric Company
Room 801
570 Lexington Avenue
New York, N.Y. 10022

Brochures: Free

21. THE TECHNICIANS AND TOMORROW

FILM LIST

PRODUCTION

1. DUPONT STORY, THE   Free   Color   40 min.

Mr. Dupont, an immigrant from France, began by producing gunpowder. The company grew and changed hands many times, but it never fell apart. There was continuous research being conducted. Dynamite was produced. Then they diversified and such products as lacquers, artificial leather, plastics, dyes, and nylon resulted. Management policies are also touched upon.

DUPONT AND COMPANY, Motion Picture Section, Advertising Dept.
Wilmington, Del. 19898

2. PRODUCTIVITY -- KEY TO AMERICA'S ECONOMIC GROWTH   Free (1964)
Color   28 min.

Through the years increased productivity has been the key to America's economic growth. Various industries are looked at to see how they have progressed through the years and added to economy of the United States. Mechanical inventions have greatly helped the farmer increase production. Competition has helped to get better products at lower prices. Problems resulting from this ever changing economy are also discussed.

DOALL COMPANY, Film Librarian, 254 North Laurel Avenue, Des Plaines, Illinois 60016

3. AIR CARGO   Free   Color   30 min.

This film stresses the importance of air freight in today's world where time is so crucial. Several different kinds of jets are looked at. Also different methods of loading planes are covered. The film touches upon pre-transit, packaging, loading, muscle action, mechanical action, pressure, storage, distribution, limitations, and facilities.

ASSOCIATION FILMS INC., 561 Hillgrove Avenue, LaGrange, Ill.
60525

4. AMERICAN ROAD   Free   Color   39 min.

The mud trail was a way of life. But as transportation methods improved so did the roads. This film follows the development of the Ford Motor Company from Henry Ford's Quadracycle to the luxurious Lincoln. The Model A and T are covered along with the assembly line methods needed to produce them cheaply. Roads were made better, filling stations grew, and travel all over the country become relatively inexpensive.

FORD MOTOR COMPANY, Ford Film Library, The American Road,
Dearborn, Michigan 48121

5. MEN AND MACHINES, OF Free (1963) Color 27 min.

A group of production research men work to improve production of telephone parts. The film shows many of the problems that men encounter in new methods of production and how they are solved.

STERLING MOVIES, 43 West 61 Street, New York, New York 10023

6. STYLING AND THE EXPERIMENTAL CAR Free Color 18 min.

This film discusses the role of the stylist in designing car styles that are functional, yet pleasing to look at. Ideation and planning are covered thoroughly. Also prototype and model are discussed. Several experiemental cars are looked at.

FORD MOTOR COMPANY, Ford Film Library, The American Road, Dearborn, Michigan 48121

7. HOUGH STORY, THE

"There is no such thing as a doubtful unit" is the central theme of this film. The Hough Division of International Harvester produces rubber tire tractors such as the Payloader and Paydozer. The film takes the audience through the factory and shows how special high alloy steel is made, how automatic tooling is used, how parts are assembled, how units are shot, blasted and painted, and finally how information is processed to be used in the distribution of parts. Inspection in all areas and with complicated equipment is emhasized constantly.

MODERN TALKING PICTURE SERVICE, 114 Nicollet Avenue, Minneapolis, Minnesota 55403 OR MODERN TALKING PICTURE SERVICE, 16 Spear Street, San Francisco, California 94105

8. STORY OF PRODUCTIVITY, THE Free Color 30 min.

This film is a discussion of the Hall of Progress that is operated by the DoAll Company. In lecture form, a narrator describes a large sun wheel on which America's industrial growth is outlined.

DOALL COMPANY, Film Librarian, 254 North Laurel Avenue, Des Plaines, Illinois 60016

9. TOOLS AND RULES FOR PRECISION MEASURING Free B&W 40 min.

This film begins by giving early means of measurement such as the cubit, hand, span, and foot. It then stresses the need for uniformity and precision in interchangeable parts. A short history of Leroy Starrett and his business is presented. The film is mainly devoted to the application of the many precision tools manufactured by Starrett.

L.S. STARRETT COMPANY, Educational Division, 121 Crescent Street, Athol, Massachusetts 01331

10. DIE CASTING -- HOW ELSE WOULD YOU MAKE IT Free Color 44 min.

Die casting is the process of injecting molten metal under pressure into a die. Many areas of conditioning are discussed. Some of the outstanding ones are mechanical, heat, forming, and finishing. Many ways of forming are shown to emphasize the point that die casting is the only economical way in certain instances. The Machinery used is also discussed.

ALCOA ALUMINUM, Aluminum Company of America, Motion Picture Section 794 Alcoa Building, Pittsburgh, Pennsylvania 15219

11. DRAMA OF METAL FORMING Free Color 30 min.

Metal forming can be divided into pressing, squeezing, and rolling operations. Each of these and the machines used is discussed in detail. The processes included are hot rolling, shearing, cold rolling, annealing, forging, drop forging, rotary forging, and extrusion.

SHELL OIL COMPANY, Film Library, 450 North Meridian Street Indianapolis, Indiana 46204 or SHELL OIL COMPANY, Film library, 430 Peninsular Avenue, San Mateo, California 94401

12. FOR EVERY WHEEL THAT TURNS Free Color 30 min.

This is the story of a tire from design to actual road testing. The main part of the film is devoted to the process of making a tire. This begins by mechanically conditioning made by molecular modification. Using pressure the tire begins to take shape. In a large heated press, the final forming is done. Inspection then takes place and actual road tests are made before the tire is considered 100% ready.

ASSOCIATION FILMS, INC., 561 Hillgrove Avenue, LaGrage, Illinois 60525

13. HEART OF THE MATTER Free Color 20 min.

The film is concerned with the production of steel tools. Performance value and maximum life as far as production is concerned are of prime importance in producing tool steel. The operations in forming the tool are discussed. These include machining, heat treating, grinding, and the final point is the carbide concentration of the steel determines the character of the tool.

LATROBE STEEL COMPANY, Latrobe, Pennsylvania 15650

14. NEW HORIZONS IN ALUMINUM BRAZING Free Color 24 min.

Research has led the way to economical and efficient aluminum brazing. There are three types of aluminum brazing: torch brazing, furnace brazing, and dip brazing. Each is discussed thoroughly. Alcoa has also done much research on filler metal and now offers many sizes and forms. The latest development is brazing sheet that already contains a layer of filler metal.

ASSOCIATION FILMS, 561 Hillgrove Avenue, LaGrange, Illinois 60625

15. OUR MR. SUN Free Color 60 min.

"Our Mr. Sun" combines entertainment and information, using actors, animated characters, and filmed scenes from all over the world. It is a story within a story and opens with Dr. Research and the writer trying to tell the story of the sun and what it means to life on the earth. Some of the things covered are attitudes held by ancient man, physical properties of the sun, how the sun burns, how the sun produces food, and man's attempts to harness the sun's energy.

WISCONSIN TELEPHONE COMPANY, Public Relations Department,
740 North Broadway, Room 240 Milwaukee, Wisconsin 53202

16. B-D CONTROLS-THE CONSCIENCE OF A COMPANY Free color 10 min.

Quality control at Becton-Deckinson Company makes them a leader in the production of quality sterile disposable syringes. Some control methods are shown.

ASSOCIATED FILMS, INC., 561 Hillgrove Avenue LaGrange, Ill.

17. HULL 1679 Free Color 30 min.

"Hull 1679 is the story of the fabrication and assembly of a 106,500 ton tanker, actual construction is shown. There is a discussion on the number of specialized skills necessary to complete the job. Some sea trials are shown.

ROA'S FILMS, 1696 North Astor Street, Milwaukee, Wisconsin 53202

18. FUTURE IN STEEL Free Color 28 min.

This film ties together very well the processes of the steel industry and the vast array of engineering opportunities available. Every aspect of the steel industry from mining and unloading the raw materials to the management and office work is covered. It offers an excellent overview of the steel industry.

ROA'S FILMS
1696 North Astor Street
Milwaukee, Wisconsin 53202

19. WORLD OF HENRY FORD, THE Free Color 35 min.

The film goes through the life of Henry Ford. It begins at his birth and looks at the world scene at the time. Topics covered are the quadracycle, early auto racing, the Model T, the assembly line, better roads, urbanization, tractors, international relations, Rouge Plant, modern facilities and trends.

FORD MOTOR COMPANY, Ford Film Library, The American Road
Dearborn, Michigan

20. INDUSTRIAL ARTS: A SAFE SHOP Free #497 12 min.

Describes safety rules applicable to the industrial arts shop. Shows such measures as the use of proper clothing, goggles, and shields; the spacing of work areas; the use of power tools and hand tools; the disposal of waste; the storage of lunber and inflamable liquids; the care of electrical equipment; and proper conduct in the shop.

GEORGIA STATE FILM LIBRARY

21. TOOLS Free #2001 11 min.

Depicts the development of tools from sticks, antlers, shells, and bones by early man. Explains how each man made his own tools for survival. Points out that similar tools are still being used and shows many modern hand tools and equipment.

GEORGIA STATE FILM LIBRARY

22. MACHINES Free #1344 10 min.

Shows a small boy running vainly to keep up with older members of the Rangers Club who are riding bicycles, thus illustrates man's dependence upon machines. Exhibits and demonstrates the operation of simple machines such as the lever, the inclined plane, the pulley, the wedge, and the screw. Explains how a door knob and a pencil sharpener are elaborations of quite primitive machines.

GEORGIA STATE FILM LIBRARY

23. ABC OF HAND TOOLS, THE Free Color 26 min.

Completely animated, a primitive pete demonstrates the wrong use of hand tools. The correct way is then shown. The film covers the following tools: hammers, screwdrivers, pliers, wrenches, files, saws, chisels, drills and punches.

GENERAL MOTORS, Public Relations Staff, Film Library,
General Motors Building, Detroit, Michigan 48202

24. DON"T DROP YOUR GUARD Free Color 10 min.

Machine guards should always be used by the operator. The film shows a few scenes of different kinds of guards and what happens if they are not used.

AETNA LIFE AFFILIATED COMPANIES

INSTRUCTIONAL AIDS:

16mm Movie Film:

BREAKTHROUGH IN TRANSPORTATION free, color, 20 min.

The development of the semi-trailer traveling on rails as a boxcar. Special attention is given to the materials-handling aspects of this form of freight hauling. A brief section is shown on coupling and getting the cars ready for transit.

Source: Baltimore & Ohio Railways
3900 Terminal Tower
Cleveland, Ohio 44113

FOLLOW IT ALL THE WAY free, color 25 min.

This is the story of a salesman trying to sell a new line of women's apparel to the J.C. Penny Company. The buyer takes the salesman on a tour of the plant and shows how they test materials before purchasing.

Source: Association Films, Inc.
561 Hillgrove Avenue
LaGrange, Illinois 60525

BANKING IN ACTION

A brief history of banking is given which includes such things as the National Currency Act, the Federal Reserve System, and the Federal Deposit Insurance Corporation. It also shows how the automobile industry led to business and consumer financing.

Source: Association Films, Inc.
561 Hillgrove Avenue
LaGrange, Illinois 60525

AMERICAN LOOK

This film shows modern designs brought about by designers today. It discusses packaging and design principles along with design procedure. Many materials are shown being used.

Source: Jam Handy Corporation
2821 East Grand Boulevard
Detroit, Michigan 48211

STEADY WORK STEADY PAY

Factories have to keep full employment to keep a strong economy. To eliminate unemployment industry has to have different products for seasonal periods, produce what is demanded, find new uses for old products, anticipate needs, and find year-round jobs. Examples for each are given.

Source: National Association of Manufacturers
Film Bureau
277 Park Avenue
New York, N.Y. 10017

ONWARD AND UPWARD

This film is concerned with in-service training of employees to keep them familiar with modern trends. Such things as training aids, conventions, customers, and mobile school units are discussed.

Source: National Association of Manufacturers
Film Bureau
277 Park Avenue
New York, N.Y. 10017

TRUCKS AND YOUR TOWN

This film stresses the importance of the moving of industry from urban to rural areas. It gives a short history of trucking and delves into the many uses of and kinds of trucks operating today.

Source: Sterling Movies U.A.A. Inc.
43 West 61st Street
New York, N.Y. 10023

ALUMINUM IS NOT ONLY ALUMINUM

This film is a summation of the various extras given each Alcoa customer. These include design services, research and development facilities, manufacturing assistance, sales aids, and advertising support.

EFFECTIVE LISTENING

Demonstrates the importance of effective listening in the communication process; points out the major obstacles of effective listening, and discusses the ways in which good listening habits can be developed.

Source: Catalog of Classroom Teaching Films
Georgia State Department of Education
Atlanta, Georgia

PROSPECTING

An animated training film which explains that the foundation of successful selling in a systematic method of locating prospective buyers. Presents through interviews with salesmen, three effective systems for selecting prospective buyers.

Source: Catalog of Classroom Teaching Films
Georgia State Department of Education
Atlanta, Georgia

HOW TO INVESTIGATE VOCATIONS

Considers how to interpret vocational guidance tests, how to apply this information to different vocations, how to raise questions, related to a specific job and how to gain actual job experience.

Source: Catalog of Classroom Teaching Films
Georgia State Department of Education
Atlanta, Georgia

CHOOSING YOUR OCCUPATION

Outlines the services available for helping one to choose an occupation; describes various tests to determine one's interests, abilities, and personality pattern; suggests information which one needs concerning his chosen occupation.

Source: Catalog of Classroom Teaching Films
Georgia State Department of Education
Atlanta, Georgia

General Industry Transparencies:

#1 Management Ideas
#2 Product Research and Development
#3 Market Research
#19 Job Descriptions
#20 Personnel Procurement
#25 Marketing

Source: Georgia State Department of Education

Books: Hoppock, Robert: Occupational Information, New York, McGraw-Hill Book Company, 1967.

Pamphlets:

"Advertising/Brand Management"
"Field Advertising Management"
"Market Research Management"
"Research and Development"

Source: The Proctor and Gamble Company
Public Relations Department
P.O. Box 599
Cincinnati, Ohio 45201

American Industries Slides:

16 Market Research
# 19 Manipulative Skill Learning
# 31 Transportation
# 32 Transportation - Planning
# 33 Transportation - Muscle
34 Transportation - Pressure
# 35 Transportation - Mechanical
# 36 Transportation - Gravity
# 37 Transportation - Gravity
# 39 Marketing
# 40 The Selling Process
41 Make the Sale

INSTRUCTIONAL AIDS APPENDIX

FINANCE

1. AMERICAN BUSINESS SYSTEM:
Financial Management   Rental: $5.40 B&W 29 min.

First and/or second level American Industry developmental area The film starts by showing the financial workings of a simple business (restaurant), then moves to the National Cash Register Company and shows how a business of this size goes about obtaining more capital funds.

Audio - Visual Center, Indiana University, Film #BS-100
(jh, sh, coll)

2. SPECIAL REPORT TO STOCKHOLDERS Free (1952) color 10 min.

This completely animated film shows how General Mills did financially in a one year period. A train starts out full of money. It makes stops at expenses, taxes, and stockholders. Working dollars are then discussed in some detail.

General Mills (jh, sh)

3. BEHIND THE TICKER TAPE   Free (1956) color 21 min.

Most of this film is concerned with the history of the American Stock Exchange. It goes back to the gold rush and how brokers become necessary when corporations began to form. It shows the New York Curb Agency. There is also an example of how stocks are bought over the telephone.

Ideal Pictures (jh, sh)

4. THE SPECULATORS   Free 20 min.

This film discusses the necessity of having speculators in the commodity (grain) market. It discusses such things as debt, profit, and bear. It explains the function of the Chicago Board of Trade. There is also a small section on information processing as it applies to the stock market.

Sterling Movies

5. BANKING IN ACTION   Free (1963 Color 20 min

Banks lend money to all kinds of industries. They also sell savings bonds for the federal government. A brief history of banking is given which includes such things as the National Currency Act, the Federal Reserve System, and the Federal Deposit Insurance Corporation. It ends with information showing how the auto industry led to business and consumer financing.

Association Films (jh)

6. THE SHAREOWNER Free Color 12 min

A small child gets a share of stock for his birthday, but he would rather have a train. A resident of Shareownersville explains to him some basic facts about the stock he owns. These include the types of people that own stocks and what his share in a company means to him.

STERLING MOVIES

7. WHAT IS A CORPORATION

Coronet Films - Coronet Building - Chicago, Illinois 60601

8. USING BANK CREDIT

American Banker Association - 12 East 36th Street - New York,
New York 10017

9. FINANCIAL MANAGEMENT

Indiana University Audio-Visual Center
Bloomington, Indiana 47401

INSTRUCTIONAL AIDS APPENDIX

PERSONNEL

All films listed below may be obtained from the Georgia Schools catalog No. 9 for 1968-1971.

CHOOSING YOUR OCCUPATION J-S 11 minutes 615

Outlines the services available for helping one to choose an occupation; describes various test to determine one's interests, abilities, and personality pattern; suggests information which one needs concerning his chosen occupation - C

APTITUDES AND OCCUPATIONS (SECOND EDITION) j-s-c 16 min. 4002

Shows a group of students and their counselor examining scholastic achievement, aptitude, and interest test -- the basic types used to guide students toward the selection of a satisfying occupation. Basic groups of aptitudes and interests are illustrated in relation to occupational categories. Stresses that tests must be supplemented by individual counseling and consideration of one's scholastic record and extracurricular activities. - c

PLANNING YOUR CAREER j-s 11 minutes 4858

Students are advised to plan their careers in three main steps: first, to learn about themselves; second, to find out about careers that interest them; and third, to compare themselves to the requirements of selected vocations. Follows a high school student as he works with his school guidance counselor in seeking occupational information relative to his selection of a career. - EB

PERSONAL QUALITIES FOR JOB SUCCESS j-s 10 min. 1502

Through job interviews of several high school graduates. The personality requisite for job success are illustrated initiative, good personal appearance, businesslike habits, willingness to accept criticism, and the ability to get along with people. - C

SAFETY IN THE SHOP C-T 11 minutes 408

Dramatizes three typical shop accidents, and shows how poor supervision or inadequate training may have been the real cause. Emhasizes the supervisor's responsibility in teaching and maintaining safe practices in the shop. DU

SAFETY WITH EVERYDAY TOOLS P-E-J 11 min. 1524

Cites three safety rules to help children avoid accidents. Keep tools neatly, use the right tool and use tools correctly. Demonstrates how children can work with scissors, knives, saws, and other tools.- C

LABOR MOVEMENT: BEGINNINGS AND GROWTH IN AMERICA
j-s 14 minutes 4191

Highlights the significant developments in labor's organization in the United States from 1873 through the merger of the AFL and CIO. Depicts the role played by Samuel Gompers in the development of American trade unions. Points out the factors which helped and hindered the growth of labor unions. Uses still pictures from contemporary publications to illustrate the violence of the railroad strike of 1877, the 1892 Homestead Steel Strike, and the 1894 pullman car strike in Chicago. Relates the importance of organized labor to American industry and commerce. C

JOB EVALUATION sh-c 10 minutes 1636

Considers how job evaluations aid management in determining requirements, duties, and pay scales of jobs. The work of job analyst and time-study engineers is described. MGHT

RELATIONSHIPS·

1. ABC OF HAND TOOLS, THE Free Color 26 min.

   First level American Industry introduction area of safety. Completely animated. A primitive pete demonstrates the wrong use of hand tools. The correct way is then shown. The film covers the following tools: hammers, screwdrivers, pliers, wrenches, files, saws, chisels, drills, and punches.

   GENERAL MOTORS (jh,sh)

2. DON'T DROP YOUR GUARD Free Color 10 minutes

   First level American Industry developmental area. Machine guards should always be used by the operator. The film shows a few scenes of different kinds of guards and what happens if they are not used.

   AETNA LIFE AFFILIATED COMPANIES (elem, jh)

3. ONWARD AND UPWARD
   INDUSTRY ON PARADE #415 Free B&W 12 min.

   First level American Industry developmental area. This film is concerned with in-service training of employees to keep them familiar with modern trends. Such things as training aids, conventions, customers, and mobile school units are discussed.

   NATIONAL ASSOCIATION OF MANUFACTURERS (jh)

4. WRONG WAY BUTCH Rental: $3.75 B&W 10 min.

First level American Industry safety area of industrial relationships. Film shows what not to do as far as safety measures in the shop are concerned.

BUREAU OF AUDIO-VISUAL INSTRUCTION, FILM #3014 (jh, sh)

5. YOU ARE THERE AT THE BARGAINING TABLE Free B&W 38 min.

Second or third level American Industry developmental area. Collective bargaining between the Roger's Corporation and the International Brotherhood of Papermakers is the topic of this film. The discussion depicted is one concerning wage rates. An actual bargaining session is viewed. The narrator gives some explanatory material throughout.

ILLINOIS CENTRAL RAILROAD COMPANY (sh, coll, ad)

1. APPRENTICE TRAINING Free (1952) B&W 25 min.

First or Second level American Industry developmental area. This film takes a comprehensive look at an apprentice program beginning with applying for an apprenticeship and ending with the certificate of completion. Various aspects of an apprentice program are shown. Some of these are the apprenticeship committee, vocational school, on-the-job experience, theory work and promotion.

U.S. Department of Labor (jh, sh)

15. STEADY WORK, STEADY PAY (1964) B&W 20 min.

First level American Industry developmental area. Factories have to keep full employment to keep a strong econom
To eliminate unemployment industry has to have different products for seasonal periods, produce what is demanded, find new uses for old products, anticipate needs, and find year round jobs. Examples of each are given.

NATIONAL ASSOCIATION OF MANUFACTURERS (jh, sh)

5. EASIER WAY Rental $2.25 B&W

First level American Industry developmental area. The film shows the easiest way of doing work is also the most efficient Movements are analyzed so that motions become easier and shorter.

BUREAU OF ADIO-VISUAL INSTRUCTION, Film #0627 (Jh,Sh)

ADDRESSES

Aetna Life Affiliated Companies
Information and Education Department
151 Farmington Avenue
Hartford, Connecticut 06115

Bureau of Aduio-Visual Instruction
Post Office Box 2093
1312 W. Johnson Street
Madison, Wisconsin 65701
Telephone: 262-1644

General Motors Corporation
Public Relations Staff
Film Library
General Motors Building
Detroit, Michigan 48202

OR

General Motors Corporation
Public Relations Staff
Film Library
504 Montgomery Street
San Francisco, California 94104

National Association of Manufacturers
Film Bureau
277 Park Avenue
New York, New York 10017

Illinois Central Railroad
Library of Audio-Visual Aids
Room 302A
135 East 11th Place
Chicago, Illinois 60605

U.S. Department of Labor
Poureau of Apprenticeship and Training
819 North 6th Street
Milwaukee, Wisconsin

EXTERNAL RELATIONS

F-1 MR. PUSH-A-BUTTON Free color 28 min.

Fist level American Industry developmental area. In this film a Navy Missile officer is concerned more with the proper functioning of his equipment than with his crew. He wanted the whole system mechanized until he dreamed one day how a ship could not operate without a crew of men. His attitude then changed.

Ninth Navel District
Public Affairs Film Library, Bldg. 1
Great Lakes, Illinois 6008

F-2 FIRE FIGHTING IN THE NUCLEAR AGE Free Color 14 min.

First level American Industry developmental area. In fighting an atomic fire, there are special precautions necessary. The important considerations are time, distance, and shielding. The technique is illustrated on a practice fire.

Ideals Pictures
1010 Church Street
Evanston, Illinois 60605

F-3 GROUP PORTRAIT Free Color 28 min.

First level American Industry developmental area. Twelve independent merchants belong to the National Automobile Dealers Association that constantly perform some civic duty are looked at. Service ranged from coaching Little League baseball to rescue work during the Alaskan earthquake in 1964.

Roa's Films
1696 N. Astor Street
Milwaukee, Wisconsin 53202

INSTRUCTIONAL AIDS - SECRETARIAL AND LEGAL

Kits:

1. Occupational Exploration Kit
   Science Research Associates, Inc.
   Provides students with a systematic personalized approach to job investigation

2. Widening Occupational Roles Kit
   Science Research Associates, Inc.
   WORK gives each student the opportunity to explore for himself the complex areas of career opportunities.

Filmstrips:

3. Source: Catalog of Classroom Teaching Films
   State Department of Education - Georgia

   A. Are Manners Important? j-s 11 min. 788

      Emphasizes the importance of good manners in getting along with people.

   B. Are You A Good Citizen? j-s 11 min. 653

      Stresses the need for organized youth activities and shows how they can be influencial in establishing such a program.

   C. Control Your Emotions E-J-S 15 min. 4014

      Illustrates the need for well balanced emotions

4. Game: Collective Bargaining, 15-902
   Science Research Associates, Inc. Participants play roles of either management or union negotiators at a collective bargaining session $1.90

5. Chronicle Guidance Career Kit
   Chronicle Guidance Publication
   Maravia, New York

Catalog of Classroom Teaching Films for Georgia Schools. Catalog No. 9 for 1968-1971.

6. Secretary, The: A Normal Day (Second edition)
   11 min. 1926 color page 189

   Follows Joan's activities through a normal day in a modern office. As an executive, she makes appointments, greets visitors, processes mail, supervises files, organizes a business trip, takes dictation, and transcribes. Emphasizes desirable personal qualities in a secretary. -C

7. Secretary, The: Taking Dictation (Second Edition)
11 min. 1925 page 189

Demonstrates that a good secretary has the proper materials organized to respond quickly to the boss's dictation call. She knows correct posture, how to indicate special instructions, when to interrupt and when not to, how to "key" dictation to letters being answered, and other routine dictation procedures. Also includes recording telephone conversations and taking the minutes of a meeting. -C

8. Secretary, The: Transcribing (Second edition)
10 min. 1924 page 189

Demonstrates how a good secretary does transcription efficiently. She places work materials to avoid wasting motion, establishes priorities so that rush items get out first, and uses typing techniques which produce neat letters quickly. Also includes basic letter forms and procedures for transcribing from a dictating machine. -C

Name ______________________________

SURVEY OF OCCUPATIONAL MATURITY

Please complete the following questionnaire concerning the occupation you would like to follow as your life's work. Answer each question as truthfully as you can. If you have questions about the meaning of any items, ask the teacher to help you.

The occupation I have chosen for my life's work is ____________________.

Part I

This part of the questionnaire is concerned with your choice and your educational-occupational plans for attaining your goal.

Directions: Place a check (✓) if you feel the item applies to you.

1. How much have you thought about your chosen occupation? (check)

   very little ___
   some ___
   much ___
   very much ___

2. Do you plan to attend high school?

   yes ___
   no ___

3. Would you like to have a part-time job while in high school?

   yes ___
   no ___

4. If yes, what job? ____

5. Do you plan to continue your education after graduating from high school?

   yes ___
   no ___

   A. If no, what job do you plan to enter after completing high schoo

   ____

6. If you could choose, what job would you like to be in ten years from now? ____________________________

   A. Is this the job you would like to follow the rest of your life?

   yes ___
   no ___

   B. If not, what is the job you would like to follow the rest of your life? ______________________________

7. The job that I listed as my life's work at the top of this page would require that I: (check as many as apply)

   a. have on-the-job training ___
   b. finish high school ___
   c. go to college ___
   d. work with people ___
   e. advise people ___
   f. talk a lot ___

8. It would also require that I: (check as many as apply)
   a. learn rapidly ___
   b. read instructions ___
   c. collect and use facts ___
   d. write articles ___
   e. express ideas and attitudes ___
   f. be skilled in mathematics ___

9. It would also require that I: (check as many as apply)
   a. have good eye sight ___
   b. have good hearing ___
   c. recognize colors ___
   d. work outside ___
   e. work inside ___
   f. lift and carry heavy loads ___

10. Have you talked with your parents about your occupational plans?
    yes ___
    no ___

11. Are your parents pleased with your proposed plans?
    yes ___
    no ___

12. Have you considered your military obligation in your plans for the future?
    yes ___
    no ___

13. Do you feel you have ability to enter and progress in the occupation you have chosen?
    yes ___
    no ___

Directions: Check the one you believe has the greatest responsibility for any choice you make in life. Pay particular attention to the word or words which are underscored.

14. Based upon the idea that adequate information is possessed by all, who should be most willing to accept responsibility for your occupational choice?
    a. your counselor a. ___
    b. you b. ___
    c. your parents c. ___
    d. your homeroom teacher d. ___
    e. none of these e. ___

15. If cost is no barrier to training, who should accept responsibilit for your choice of an occupation?
    a. your mother a. ___
    b. your father b. ___
    c. your counselor c. ___
    d. you d. ___
    e. your principal e. ___

16. If several occupational choices are available to you, who should accept the responsibility for the choice you make?

a. your parents a. ___
b. your teacher b. ___
c. your counselor c. ___
d. you d. ___
e. your principal e. ___

17. Check the one you believe has the greatest responsibility for your educational plans.

a. your parents a. ___
b. your counselor b. ___
c. your homeroom teacherc. ___
d. you d. ___
e. your best friend e. ___

18. If cost is no barrier who should be responsible for your educational plans?

a. your mother a. ___
b. your father b. ___
c. your counselor c. ___
d. you d. ___
e. your principal e. ___

19. If you fail to be successful in an educational plan whose responsibility is it?

a. your parents' a. ___
b. yours b. ___
c. your counselor's c. ___
d. your principal's d. ___
e. your best friend's e. ___

20. Who should decide what your occupational plans should be?

a. your father a. ___
b. both of your parents b. ___
c. you c. ___
d. your counselor d. ___
e. your homeroom teachere. ___

21. If adequate information is possessed by all, who is most responsible for your occupational plans?

a. your teacher a. ___
b. your counselor b. ___
c. you c. ___
d. your principal d. ___
e. your best friend e. ___

22. If several occupational plans are available to you, who should be responsible for the one you accept?

a. your teacher a. ___
b. your counselor b. ___
c. you c. ___
d. your mother d. ___
e. your principal e. ___

Part II

This part of the questionnaire is concerned with your knowledge and understanding of the requirements, training, duties, conditions of work, and opportunities in the occupation you have chosen as your life's work. (Check as many as apply in each question)

23. How much education do you think you will need in order to reach your occupational goals?

high school ___
on-the-job training ___
trade school ___
apprenticeship ___
business school ___
junior college ___
4 year college ___
graduate school ___
2 to 3 years of special training ___
I don't know ___

24. What scholastic requirements are necessary for entrance into your occupation?

Superior ___
very high ___
high ___
average ___
low ___
uncertain ___

25. What subjects are necessary or desirable for entrance into your occupation? Check the courses below·

mathematics ___
science ___
English ___
history ___
art ___
business ___
music ___
industrial arts ___
home economics ___
physical education ___
others ___

26. What type of training is required in your occupation? Check your answer.

on-the-job training ___
college ___
apprenticeship ___
trade school ___
___________________ others ___
I don't know ___

27. What is the length of training or educational period required for entrance into your occupation?

0-5 months ___
6-11 months ___
12-18 months ___
19-36 months ___
4 years ___
6 years ___
___________________ other ___
I don't know ___

28. Where are these training or educational facilities located?

in this city ___
in this county ___
in this state ___
out-of-state ___
I don't know ___

29. Approximately, how much money is needed to complete your training or education.

0 - $499 ___
500 - 999 ___
1000 - 1499 ___
1500 - 1999 ___
2000 - 4999 ___
5000 - 10,000 ___
10,001 - over ___
I don't know ___

30. What abilities are usually required by your vocation?

verbal aptitude ___high ___average ___low
numerical aptitude ___high ___average ___low
general learning ability ___high ___average ___low
spatial aptitude ___high ___average ___low
form perception ___high ___average ___low
clerical perception ___high ___average ___low
eye-hand-foot coordination ___high ___average ___low
motor coordination ___high ___average ___low
uncertain ___

31. What personality traits are important in your occupation?

understanding ___
leadership ___
ability to follow ___
open-minded ___
trustworthy ___
uncertain ___

32. What are the health requirements?

must have good mental health ___
must be in good physical health ___
must have physical strength ___
must have endurance ___
uncertain ___

33. What are the physical demands required in your vocation? (Check as many as apply)

stooping ___
crawling ___
reaching ___
feeling ___
seeing ___
climbing ___
kneeling ___
handling ___
talking ___
listening ___
others ___________

34. Indicate the average ages of people entering and retiring from this occupation:

Entering
16-17 ___
18-19 ___
20-21 ___
22-23 ___
over ___
I don't know ___

Retiring
30 yrs. service ___
63 ___
64 ___
65 ___
66 or over ___
I don't know ___

35. Name some of the necessary tools, machines and materials for your occupation.

Tools 1. ___
2. ___
3. ___
Machines 1. ___
2. ___
3. ___
Materials 1. ___
2. ___
Others 1. ___
2. ___
I don't know ___

36. What are the working conditions in your occupation? (Check as many as apply)

Inside ___
hazard ___
extremes of cold ___
wet and humid ___
___ others ___
uncertain ___

outside ___
isolated ___
extremes of heat ___
noise ___

37. Is the occupation important to your community?
yes ___
no ___
uncertain ___

38. What degree of accuracy is required for your occupation?

very high ___
very little ___
none ___
uncertain ___

39. What amount of care must be given to machines for good working conditions?

very good care ___
much care ___
little care ___
continuous care ___
no care ___
uncertain ___

40. What can mistakes, carelessness and poor work cause?

loss of job ___
loss of pay ___
ruin the company ___

41. What is the timing or pace of work involved?

hourly ___
by the piece ___
continuous work ___
irregular work ___
uncertain ___

42. If you were to compare your chosen occupation with other occupations in how well it paid, how would your occupation rank?

a. above average ___
b. about the same ___
c. below average ___
d. don't know ___

43. Approximately, what are the average number of hours worked each week for a person with your occupation?

a. 20 ___
b. 40 ___
c. 80 ___
d. don't know ___

44. If you were working at this occupation, mark those items that migh be part of your total working time.

a. shift work ___
b. overtime ___
c. part-time ___
d. seasonal work ___
e. take-home work ___
f. don't know ___

45. Training in either school or on the job is a part of every occupation. Which of these might also be required of you?

a. union membership ___
b. professional membership ___
c. license by state or federal government ___
d. don't know ___

46. Mark those statements that are true about the occupation you have presently chosen as your own.

a. there are health hazards yes___no__
b. work is pretty much the same every day routine yes___no__
c. you will work with the same few people each day yes___no__
d. don't know ___

Part III

The final part of the questionnaire is concerned with the planning and the extent of the planning you have done thus far on your future occupation. This section is also concerned with the people and the resources who have helped you in your planning for the future.

47. What school do you plan to attend beyond high school?

apprenticeship ___
business school ___
college or university ___
junior college ___
technical school ___
none ___
I don't know ___

48. Have you gone to anyone for help in deciding whether to continue your high school studies?

yes ___
no ___

If yes, to whom did you go for help?
parents ___
teacher ___
counselor ___
principal ___
school friend ___

49. Have you gone to anyone for information or help in deciding whethe or not you should plan to go to college, which college to attend, or what to study at college?

yes ___
no ___

If yes, to whom did you go for help?
parents ___
teacher ___
counselor ___
school friend ___
principal ___

50. Which of the following high school courses of study do you plan to follow?

general course ___
vocational course ___
college-prep course ___
agriculture ___

50. cont'd Does this course of study

a. add to your training for the life work of your choice? ___
b. keep the door open to college? ___
c. match your parents' idea of a career for you? ___

51. In what part of the United States do you prefer to work?

East ___
Middle Atlantic ___
South ___
West ___
Midwest ___
I don't know ___

52. What are your plans after you have finished college? (Check as many as apply)

immediate employment ___
marriage ___
travel ___
higher education ___
live at home ___
on-the-job-training ___
uncertain ___
other ___
does not apply ___

53. If you have decided not to attend college, check the following preference that fits in with your occupational plans.

A. prefer
  no training after high school ___
  3 months training after high school ___
  3 months to one year training after high school ___
  more than one year training after high school ___

B. prefer
  immediate job placement after school in work requiring no formal on-the-job training ___
  placement in job after preliminary training ___

C. prefer
  job with no in-service training requirements ___
  job with long-range training program and in-service courses for advancement ___

54. Are you participating in extra curricular activities or on-the-job training that will prepare you for your chosen occupation?

extra curricular activities yes___no ___
on-the-job training yes___no ___

55. If you cannot follow your present occupational plans, do you have another plan to follow?

yes ___
no ___
uncertain ___

56. Who or what influenced you to choose this occupation?

parents ___
friends ___
personal interests ___
interest tests ___

57. In preparing for your chosen occupation, what will be your major problem?

finances ___
being away from home ___
educational background ___
I don't know ___

58. What are the demands and the chances for employment in your chosen occupation?

great ___
above average ___
average ___
limited ___

59. Are there opportunities for advancement in your chosen occupation?

yes ___
no ___
maybe ___
don't know ___

60. What factors will determine your advancement in your chosen occupation?

additional training ___
your ability ___
length of time worked ___
quality of your work ___

61. Which of the following persons helped you most and provided the most information for you in choosing your occupational field?

school principal ___
teachers ___
counselors ___
parents ___

62. What factors will you consider as critical in receiving the traini for your chosen occupation?

distance from home ___
time to complete training ___
geographical area ___
climatic conditions ___
none of the above ___

63. Will your chosen occupation require you to do:

heavy work ____
medium work ____
light work ____

64. How often did you seek information from each of the following when making your high school plans and tentative occupational choice? Please check.

(number of times)

	0	1	2	3	4 or more
A. Occupational Outlook Handbook					
B. D.O.T.					
C. S.R.A. Kit					
D. Chronicle files					
E. Counselor					
F. Department of Labor					
G. State or local employment office					
H. Chamber of Commerce					
I. Parents					
J. Telephone Directory					
K. Friends					
L. Person employed in the particular occupation in which you're interested					
M. Employer in this occupation					
N. Teacher					
O. Others (please list)					

____

____

____

PERSONAL DATA QUESTIONNAIRE

Name ________________ Grade ________ Date ________

Address ________________ Telephone ________

Age ____ Date of Birth ________________ Sex ________

Place of Birth ________________________

A. You, Your Family and Your Home

1. Father's name ________________ Occupation ________

2. Mother's name ________________ Occupation ________

3. If not living with your parents, with whom do you live and what is the relationship of this person to you?

   Name ________________ Relationship ________

4. Check those which apply to your parents:

   Parents live together ____
   Parents are separated ____
   Parents are divorced ____
   Mother not living ____
   Father not living ____

5. Mark the education attained by each of your parents

	Father	Mother		Father	Mother
Grades 1-6	____	____	Business school	____	____
Grades 7-9	____	____	Jr. College	____	____
Grades 10-12	____	____	4 yr. college	____	____
			Other	____	____

6. How many of each of the following live in your home?

   Older brothers ____
   Older sisters ____
   Younger brothers ____
   Younger sisters ____
   Grandmothers ____
   Grandfathers ____
   Other relatives ____
   Other ____

7. In what type of dwelling do you live? Apartment ________ Trailer ________ House ________

8. Do other persons share your bedroom? yes ___ no ___
   If yes, how many? ________

9. How long have you lived in this city? ________________

   List other places you have lived ________________________

   ____

10. Is English the only language spoken in your home? yes ___ no ___

    If no, what other languages are spoken? ________________

11. Do you have any physical disabilities? Yes____ no_____

If yes, describe ____

____

B. YOUR EDUCATION (PRESENT AND FUTURE)

1. List school you have gone to before you came here.

Name of School	City	Grades Attended
a.		
b.		
c.		
d.		
e.		

2. Is school work hard for you? Yes _____No_____

3. Which school subject do you like best? ____________________

____

4. Which subjects do you like least? ____________________

____

5. Circle the grades in school which you have repeated. 1 2 3 4 5 6 7 8 9

6. Which subject, or subjects, do you spend the most time on outside of class? ____________________

7. Which subject, or subjects, do you spend the least time on outside of class? ____________________

8. Where do you do your homework assignment? ____________________

____

9. How mcuh time do you spend on your homework assignments each day? ____________________

10. Do you study with anyone? Yes___No___ if yes, with whom?

____

11. Do you use the school library often? Yes ___ No___

The public library? Yes ___ No ___

12. After high school graduation, do you plan to: (Check those which apply)

a. attend vocational school? ______
b. attend a junior college?________
c. attend a four-year college?_____
d. get a job?_____________________
e. other? (describe)______________

13. Have you talked to anyone about your plans? Yes_____No_____

14. Would you like to talk about your plans with the school counselor? Yes_____ No _____

YOUR OCCUPATIONAL FUTURE

1. List all of the jobs you have had. Begin with your latest (or present) job and work back.

	Job	Length of time employed	Did you Like it?	Why?
1.	______________	______________________	Yes_____No ____	______________
2.	______________	______________________	Yes_____No____	______________
3.	______________	______________________	Yes_____No____	______________
4.	______________	______________________	Yes_____No____	______________

2. What was your most interesting job? ______________________

3. Why did you like it? ______________________________

4. List, in order of your preference, occupations in which you would like to earn your living. Do not consider abilities or job opportunities. Just consider whether you would be happy in the work.

	OCCUPATIONS	REASON FOR INTEREST IN OCCUPATION
1.	____________________________	______________________________________
2.	____________________________	______________________________________
3.	____________________________	______________________________________
4.	____________________________	______________________________________
5.	____________________________	______________________________________

5. What is your present vocational choice?____________________

6. When did you make this choice? (Give the year)______________

7. Why did you make this choice? (check the reasons)

Family suggestion or tradition ___
Advice of teacher or counselor ___
Advice of friends
Advice of someone I admire ______
or respect
A choice of my own ______

Good pay____________
Best suited to my abilities__
It will give me prestige
in the community__________
Other________________

8. How certain are you that this occupation is one you will likely prepare for? (check)

Very certain and satisfied_____
Uncertain _____
Doubtful _____

9. How much information do you have about the requirements of the occupation you have chosen? (check)

None____________

Some____________

Extensive amount____

10. What vocation do (or did) your parents want you to follow?

____

Why?____

Do you agree with their choice?______________________

11. Are you acquainted with any people who are at work in your chosen field?______________________________

Who are they?	Names of companies for which they work	What are their positions

12. What job would you like to be doing 10 or 15 years from now?

____

YOUR SOCIAL AND RECREATIONAL LIFE

1. Do you consider yourself to be popular with your classmates?
Yes ___ No_____

2. With which sex are you more popular? Male_____ Female______

3. Do you have difficulty in talking with people? Yes_____ No_____

4. List school activities in which you have taken part.

________________________________ ___________________________________

________________________________ ___________________________________

________________________________ ___________________________________

5. Office held? ____

6. List some of the activities which you and your family do together.

________________________________ ___________________________________

________________________________ ___________________________________

7. Do you have a hobby? Yes_____ No_____ If yes, what?______________

____

8. How much outside reading do you do? Very much__________ Average___
Very little _____ None_____

9. What kind of reading do you enjoy? ______________________________

10. List your favorite magazine. _____________________________________

11. What parts of the newspaper do you most enjoy reading? __________

____

12. What are your favorite television programs? _____________________

____

13. What "movies" have you enjoyed most? _____________________________

____

14. What do you consider your talents? _______________________________

____

15. What are your favorite indoor activities? ______________________________

____

YOUR PERSONAL CONCERNS

Answer the questions below to the extent that they apply to you. Check only one blank for each question.

	Always	Often	Seldom	Never
1. Are you able to get along with associates?				
2. Do you make friends easily?				
3. Do you feel at ease around strangers?				
4. Do you speak with ease before a group?				
5. Do you receive spending money?				
6. Do you feel that the amount of money you receive is sufficient?				
7. Do you receive extra money for doing various jobs at home?				
8. Do you feel guilty over some of your behavior?				
9. Do you have someone to whom you can go to talk over personal matters?				
10. Do you feel that you are a cooperative person?				
11. Are you a punctual person?				
12. Are you a cheerful person?				
13. Do you have worries or fears?				
14. Do you complete jobs assigned to you?				

RESEARCH AND EVALUATION DESIGN FOR THE MANUFACTURING COURSE IN THE MIDDLE GRADES

The major purpose of this course is to increase the student's understanding of himself and the world of work and/or an increased understanding in career development.

In developing a research design to evaluate the results of this course the following points or factors may be used:

1. Selecting The Classes or Groups to Participate in the Study.

A minimum of two classes should be selected for the purpose of evaluation. One class should serve as the experimental group and the other as the control group. Additional classes or groups may be used if feasible.

If possible, an attenpt should be made to equate the two groups on important characteristics (i.e. ability, achievement, socio-economics, etc.). Use the present testing data and other information present to equate the groups. Additional data should be accumulated for this purpose if needed.

2. Instruments and Procedures in Instructional Activities to be Used.

A. At the beginning and end of the year administer (1) the Career Development Survey and (2) either the Kuder General Interest Inventory, form E, the S.R.A. Interest Inventory "What I Like To Do", or the Ohio Vocational Interest Survey to both groups.

B. During the course, in cooperation with the Industrial Arts Teachers, administer the instructional activities and other resources as outlined in the "Manufacturing" course lesson plans.

3. Treatment of Data*

A. Determine if the tentative occupational choice that is chosen as his life's work is a realistic and/or logical choice as revealed by both the pre and post survey.

(1) Compare the choice made by the student, both initially and at the end of the course, with his significant interest fields as measured by interest inventories.
(2) In addition to the School Counselor and Industrial Arts Teacher, additional judges may be used to determine the above.

B. Determine the degree of change in interest, if any, that occurred during the course as a result of the interest inventory measurements.

(1) On both the pre and post administration of the interest inventories, rank the stanine scores on each student from high to low. Use a ranking of 1, for the high score to 10 for the low score (for the Kuder General Interest), an similar ranking for the other inventories.

a. Compare these results to determine if there are changes in interest. If the stanine change is two or more, consider this to be significant.

C. Determine if the students' knowledge and understanding of his chosen occupation have increased as a result of the course.

(1) Compare the data obtained on the pre and the post Career Development Survey if the student's tentative occupational choice remains constant.

a. If the student's occupational choice has changed, as a result of the course or otherwise, compare the authenticity of the information as revealed by the Career Development Survey on the post and pre administration of the Survey.

4. Develop Additional Instruments To Assist In Evaluating The Results of the Course

A. Counselors and Industrial Arts Teachers may construct evaluative instruments to measure certain and specific aspects of the activities of the course to determine its effectiveness.

*Use both the experimental and control groups in comparisons as well as the differences, if any, between the two groups.

TEST PROFILE

School____________________ Location____________________ Group________________

Counselor____________________

	M. M.		Achievement					Kuder General Interest Stanines Survey Form E										Kuder Preference Record Personal				
	Date	Stanine	Date	Stanine	Date	Stanine		0	1	2	3	4	5	6	7	8	9	1	2	3	4	5

*Note: All scores are to be recorded as Stanines.

FOUR YEAR PLAN FOR COURSE OF STUDY

Pupil's Name (Last) (First) (Middle)

Grade 8 Date:	
Subject: Av.	Voc. Interests:
1. English	
2.	
3.	Post High School
4.	Educational Plan:
5.	1.
6.	2.
7.	3.

Grade 9 Date:	
Subject: Av.	Voc. Interests:
1. English	
2.	
3.	Post High School
4.	Educational Plan:
5.	1.
6.	2.
7.	3.

Grade 10 Date:	
Subject: Av.	Voc. Interests:
1. English	
2.	
3.	Post High School
4.	Educational Plan:
5.	1.
6.	2.
7.	3.

Grade 11 Date:	
Subject: Av.	Voc. Interests:
1. English	
2.	
3.	
4.	
5.	
6.	
7.	

Grade 12 Date:	
Subject: Av.	Voc. Interests:
1. English	
2.	
3.	Post High School
4.	Educational Plan:
5.	1.
6.	2.
7.	3.

Date and Initial	Tests Data